

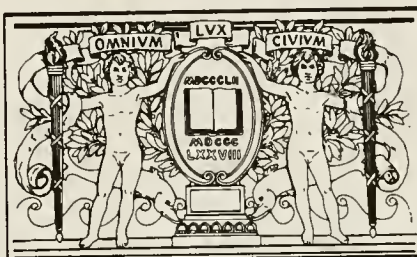
GOVDOC

BRA

2273

2

Summary



BOSTON
PUBLIC
LIBRARY



400 10 727

Government
Document

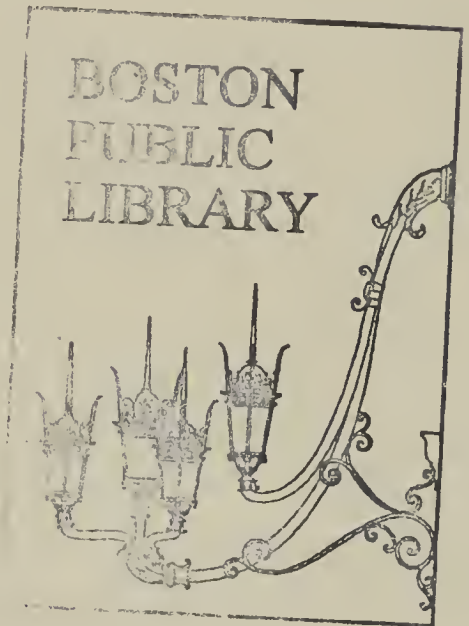
BPA

2273

x



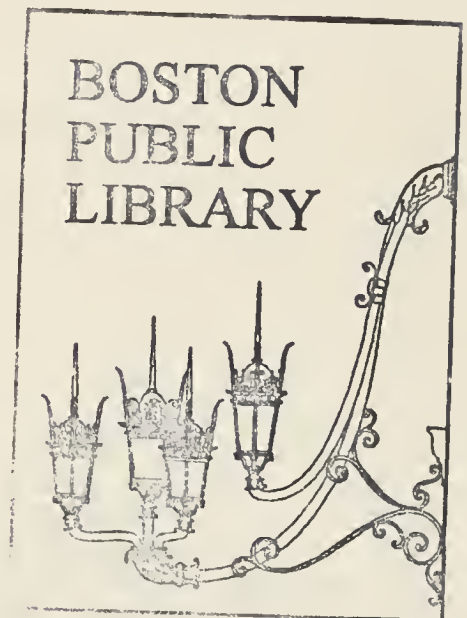
Northeastern University Boston Campus Master Plan



Sasaki Associates, Inc.

September 1987

N Northeastern University
Boston Campus Master Plan



Sasaki Associates, Inc.

September 1987

TABLE OF CONTENTS

		<u>PAGE</u>
I. THE CAMPUS TODAY	CAMPUS AND ENVIRONS	1
	CAMPUS CHARACTER/BUILDING ENVIRONMENT	2
	Land Use	3
	Student Housing	4
	Open Space and Pedestrians	5
	Traffic	6
	Parking	7
	Buildings	8
	Utilities	9
	UNIVERSITY OVERVIEW AND ENROLLMENT	
	University Overview	11
	Enrollment	12
II. PROGRAM FOR PLANNING	ENROLLMENT AND ACADEMIC CHANGE	
	Enrollments	13
	FACILITIES PROGRAM	
	Academic and Student Services	13
	Student Housing	15
	Athletics and Recreation	16
	Research	17
	The Century Fund	17
	RECURRENT THEMES	18
III. PLANNING OBJECTIVES	INTRODUCTION	
	Reinforce Quality of Life	19
	Establish Organizing Framework	20
	Recognize Windows of Opportunity	21
	Establish Practical, Affordable Phasing	21
	Commit to Early Campus Organization	22
	Recognize Planned Community Changes	22
	Maximize Organization Efficiencies	23

TABLE OF CONTENTS (CONTINUED)

	<u>PAGE</u>
IV. MASTER PLAN RECOMMENDATIONS	
CAMPUS STRUCTURE	
Land Use/Functional Relationships	24
Open Space/Pedestrian System	26
Vehicle Circulation/Service/Parking	28
Utilities	32
FACILITIES ACCOMMODATION	
Resource Center	35
College of Engineering/Sciences	35
College of Business Administration	36
Performing Arts Center	36
Academic Buildings	36
University Housing	37
Athletics and Recreation	37
Parking Structures	38
PHASING	
Core Consolidation	39
Campus Expansion	40
Campus Maturity	41
V. CAMPUS DESIGN GUIDELINES	
Introduction	43
Open Space	43
Buildings	54
APPENDIX	

LIST OF FIGURES

	<u>PAGE</u>
1. Campus Location	2
2. Campus Context	4
3. Existing Campus Conditions	10
4. Illustrative Campus Plan	25
5. Land Use/Building Use Plan	27
6. Circulation Plan	31
7. Phasing Plan	42
8. Design Guidelines	
8a. Campus Edges	44
8b. The Mall	45
8c. Forsyth Street	46
8d. Connector Spaces	47
9. Open Space Design Guidelines Concept Plan	49

LIST OF TABLES

1. Full-Time Undergraduate Enrollment	13
2. Open Space Design Guidelines	50

APPENDIX

A. Utilities Plans	
A1. High and Low Voltage Electrical System	
A2. Sewers and Drainage	
A3. Water Lines	
A4. Gas Lines	
A5. Steam Network	

I. THE CAMPUS TODAY

CAMPUS AND ENVIRONS

Northeastern University's main campus is located in Boston, Massachusetts. The University also has campuses located in Burlington and Dedham. Other facilities owned by the University include the Marine Science and Maritime Studies Center in Nahant, the Warren Center in Ashland and Henderson House in Weston.

The University leases space in a number of area high schools including; Belmont, Brockton, Burlington, Chelmsford, Framingham, Lynnfield, Marlboro, Marshfield, Milford, Revere, Westwood and Weymouth. In addition, Northeastern University leases space in Downtown Boston and at 5 Liberty Square. Leased facilities may vary from year to year depending on the availability of space and enrollments.

The University's main campus borders on several communities within the City of Boston. The Fenway lies adjacent to the northwest, Back Bay to the northeast, Roxbury to the southeast and the Mission Hill/Medical Area to the southwest of the campus. The environs of the campus are clearly urban with a mix of housing, office, small businesses, institutions, major mass transit facilities and vacant parcels slated for redevelopment. Perhaps the most significant feature of the area is the concentration of educational and cultural institutions, such as the Museum of Fine Arts, Boston YMCA, Symphony Hall, Christian Science Center, Horticultural Hall, New England Conservatory of Music, Wentworth Institute, Roxbury Community College and Campus High/Humphrey Occupation Resource Center. Most of these educational/cultural institutions are focused along the Huntington Avenue corridor which runs through the campus of Northeastern University. As a result, the University dominates a substantial portion of this corridor by its sheer physical size and intense user activity. Figure 1., Campus Location documents the location of the main campus in the City of Boston.

The number of vacant and underutilized redevelopment parcels in the vicinity of the campus suggests that the ultimate disposition of these sites in terms of land use type and intensity will present a significant change in several areas adjacent to the campus. Increasing private investment interest as well as substantial public investment (streetscape improvements, parks, services, etc.) in the area are quite evident. Major projects include the Southwest Corridor park system which is nearing completion and the development of Parcel 18 which is anticipated to be initiated within two years.

The existing major arterial street system and mass transit routes which circulate through and around the campus today may be substantially influenced by the new developments and the Southwest Corridor mass transit facilities which were recently completed. While providing improved access to the campus at the Ruggles Street and Massachusetts Avenue stations, the opening of these mass transit facilities is also likely to provide a positive stimulus on the surrounding community in terms of increased employment opportunities and housing availability.

In summary, in the coming years the University will be faced with major changes in both the immediate land use context of the campus and the basic circulation and mass transit patterns which serve the area.

Figure 1.
CAMPUS LOCATION



CAMPUS CHARACTER/ BUILDING ENVIRONMENT

Northeastern University has a campus of approximately 53 acres. The majority of this land resource is located in contiguous parcels along Huntington Avenue. The campus extends to the south across the Southwest Corridor mass transit facilities to additional University owned parcels. To the north, the campus includes parcels along Hemenway Street and the Fenway. Figure 2., Campus Context illustrates the setting of the Northeastern University campus.

Northeastern University has experienced an incremental growth in campus facilities since its beginnings in the YMCA building in 1898. Since the purchase of its original land parcel in 1929, Northeastern University has acquired contiguous parcels and buildings to provide for academic and support facilities. While this incremental growth responded to increasing demands for facilities caused by expanding enrollments, it was not conducted as part of a larger campus plan vision until 1959 when the first formal Master Plan was prepared by the University. Today, despite the incremental pattern of growth, the land use pattern of the campus is generally well ordered.

The basic physical organization of the campus has responded to two major formative elements: the limited availability of land in the urban setting, and the geometry of the major streets and mass transit facilities which are located in the area. The limited land availability has caused a relatively tight and intensive building pattern of development on campus. The campus development response to grids created by streets and mass transit routes has resulted in buildings located on a variety of organizational grid patterns. The exceptions to this are the buildings constructed by the University which are on a formal grid aligned with Huntington Avenue which form the core academic/administrative area east of Forsyth Street.

The land use pattern on campus is founded on the academic core originally established by the buildings which frame the Northeastern University Quad (Richards Hall, Dodge Library, and the Ell Building). The academic sector today extends from Huntington Avenue south to the Southwest Corridor and west across Forsyth Street to the School of Law complex. Academic and administrative functions are generally contained within buildings in this campus core with the notable exceptions of the academic and administrative uses based in buildings along the Fenway. The Ruggles Building is presently separated from the core academic area by parking lots.

Indoor recreation facilities housed in Cabot Gymnasium, Barletta Natatorium and Dockser Hall also fall within the campus academic/administrative core area. While these facilities are user intensive, they are somewhat inconsistent with the overall academic land use emphasis traditionally associated with the campus core. Matthews Arena, on the other hand, is located on the campus periphery. While removed from the academic core, it is within easy walking distance of all parts of the campus.

Figure 2.
CAMPUS CONTEXT



Student Housing

Northeastern University has traditionally maintained a predominantly commuter student body; however, some 4,000 students are presently housed by the University. Upperclass students represent over 1,600 of total students housed, while freshmen occupy almost 2,300 of the available beds. Also housed by the University are 111 graduate students. The vast majority of students are located in University owned housing, a portion of which was constructed by Northeastern University (Speare Hall, Stetson Hall, West Apartments) while other buildings used for housing were purchased by the University. A much smaller number of students are housed in facilities leased by the University. This includes beds leased from the YMCA and other organizations. Increasing demands for housing by incoming students at Northeastern University reflects, in part, an inadequate amount of available rental housing in the vicinity of campus as well as a shift in student

preferences. In addition, the University has made a conscious effort to recruit students from a wider geographic base which increases the demand for University operated housing.

Housing styles offered to students include traditional dormitories, suite arrangements and apartments. The existing student housing facilities are concentrated north of Huntington Avenue. Exceptions to this pattern are the West Apartments, Museum Villa and Rubenstein Hall which are located south of Huntington Avenue in the western section of campus.

Open Space and Pedestrians

Open space at Northeastern University is at a premium due to its urban location. The existing open space system is based on a series of courtyard spaces linked by narrow connecting paths between buildings. In general, a shortage of useable open space exists overall on campus, and landscape materials are limited to foundation plantings along buildings. The most heavily used and visually prominent open space on campus is the Northeastern University Quadrangle which faces onto Huntington Avenue and is formed by Richards Hall, the Ell Building and Dodge Library. Another significant on-campus open space area is LeBeau Park which is located adjacent to the Parker Building in the western section of the campus. Outdoor eating and sitting areas are provided on the west and south side of the Ell Student Center. A plaza area elevated above the street level is located in association with the Law School complex.

Off-campus open space resources located in the vicinity provide the overall community open space and outdoor recreation opportunities. These include the Fens along the Muddy River to the north of the campus, the recently completed Southwest Corridor park, and Carter Playground and the playfields associated with Campus High School to the south across Tremont Street.

While many of the courtyard spaces on campus are appropriately scaled and dimensioned for pedestrian movement, most are used for car parking which severely compromises their effectiveness for pedestrian movement and their ability to establish an appropriate open space framework on campus. The most well defined pedestrian corridors are major street sidewalks and the narrow connecting spaces between buildings. Three pedestrian bridges have been

included as part of the construction of the Southwest Corridor mass transit line which provides movement across this physical barrier to University parking lots to the south. The heavy pedestrian movement between the academic core and housing areas across Huntington Avenue is impacted by the high traffic volumes and existence of the MBTA surface trolleys in the median strip. Traffic signals at Forsyth Street, Parker Street and Opera Way provide a measure of relief to this situation.

On-campus pedestrian movement also utilizes an extensive tunnel network. At present, 13 of the 36 campus academic and service buildings on campus are connected to the tunnel system. Connections are generally provided between the buildings located within the area south of Huntington Avenue, between the Forsyth Building on the west and the Uptown Garage on the east. Other sections of campus do not have tunnel connections.

Traffic

Northeastern University is predominantly a commuting student institution. While over half of the students and staff drive to campus, almost one third take some form of mass transit (MBTA, bus), approximately 10 percent walk and the remainder ride bicycles. Over 70 percent of the students, staff and faculty come from communities to the west, southwest and north of the campus.

Arrival to campus by car is distributed along several primary commuter routes which serve the city of Boston as a whole. Storrow Drive and Massachusetts Avenue bring commuters from communities to the north and northwest of campus, and the Massachusetts Turnpike provides access to campus from the west. To the southeast of campus, access is provided by the Southeast Expressway (Route 3), and to the southwest, Route 9 (which becomes Huntington Avenue) provides the major campus access route.

The major arterial streets which serve the University include Huntington Avenue, Massachusetts Avenue, Melnea Cass Boulevard, Columbus Avenue, Ruggles Street, The Fenway and Forsyth Street. While providing good access, some of these streets run through the campus (Huntington Avenue, Forsyth Street) physically splitting the campus land resource with a heavily travelled automobile corridor. The University requests that several of these existing public streets on campus be discontinued (Leon Street, Tavern Road, Field Street, and Greenleaf Street).

Mass transit lines (fixed rail) located along Huntington Avenue (MBTA Green Line) and the Southwest Corridor (MBTA relocated Orange Line) also provide excellent access to campus. The construction of the Ruggles Street station at the terminus of Forsyth Street provides a convenient access point to Northeastern University as well as establishing a new public gateway to the campus. However, like the street system, mass transit also presents physical barriers to pedestrian movement between campus sectors. In addition to physical separation, all these travel corridors introduce noise levels to campus which, although typical of urban areas, negatively impact instruction, research activities and other academic pursuits and the availability of pleasing outdoor spaces.

Many of the major streets around the campus experience heavy commuter traffic during the morning and evening peak hour times which overload portions of the existing street system. While the traffic destined for the University accounts for only a small portion of the peak hour travel, it presents constraints to staff and students attempting to access parking facilities on campus. This situation is most severe along Ruggles Street from Huntington Avenue to Tremont Street and at the intersection of Parker Street and Huntington Avenue.

Parking

The vast majority of the approximately 3,300 existing parking spaces provided by the University are located in large parking lots in the southwest sector of the campus (along Ruggles Street and Parker Street) and southeast of the Southwest Corridor along Columbus Avenue where, in addition to existing parking lots, a 995-car parking garage was recently completed. The completion of the Ruggles Street MBTA station eliminated from the University parking supply the MBTA land which has been temporarily used by the University for parking. However, this loss has been accounted for in the design of the 995-car parking garage.

Car parking is also provided within the campus core in many of the courtyard spaces immediately adjacent to academic, research and student housing facilities. While extremely convenient, cars parking in these areas result in higher noise levels within the campus, present conflicts for pedestrian movement between academic buildings within the campus, and compromise the potential for the creation of pleasing outdoor spaces.

In terms of utilization, parking lots at Northeastern University operate at functional capacity throughout most of the day. In fact, 90 percent of the current parking supply is occupied by 9 a.m. each day. As expected, the lots located closest to the academic core (Cabot Lot, South Lot, and Robinson Lot) are filled first and remain fully occupied for the longest period of the day. Since Northeastern University conducts a substantial number of evening classes, occupancy of parking spaces rises again in the early evening, with a clear student preference for spaces north of the Southwest Corridor.

Buildings

Academic and Service - The first Northeastern University classes were held in rented buildings that included the Boston YMCA. Today, the University owns almost two million gross square feet (gsf) of academic and service space at the Boston campus, housed in 36 buildings. Northeastern University also leases space for non-residential purposes which amounts to less than six percent of all academic and service facilities. Overall, the total net useable square footage of the academic and service space is approximately 82 percent (1.64 million square feet) of the total gross square footage.

Housing - Residential facilities encompass 34 facilities, 30 of which are owned by the University and four are leased. Totalling 655,605 assignable square feet (asf), the 34 facilities are composed of 21 apartment buildings and 13 dormitories. Of the 30 facilities owned by Northeastern University, four were constructed by the University.

Design - In 1934, an architectural competition was held that established the architectural style for campus: A "classical, modern" design of white-glazed brick and four- to five-story curtain walls which are accentuated in vertical dimension. This style has been consistently carried out on campus with the exception of some of the most recently constructed campus buildings (Kariotis Hall, the School of Law, Cargill Hall, and Snell Engineering Center) and those buildings not built but acquired by the University (examples include the Forsyth Building, Cullinane Hall, and the Ruggles Building). While numerous exceptions exist across the campus, this established style for Northeastern is dominant within the campus core and presents a consistent visual image for this area of campus.

Image - Building sizes vary in the campus core but this is not easily perceived due to the tight grid pattern on which the buildings are located and similarity in overall building height and elevations. The vast majority of buildings on campus fall within the four- to six-story range. The only building over seven stories on campus is the West Apartments which is 11 stories. While creating a consistency within the campus environment, the overall similarity in height limits the ability of the University to provide appropriate focal points and visual landmarks within the urban setting of the campus environs.

In summary, by sheer size and mass, Northeastern University is a major entity within the urban neighborhood; however, the campus currently lacks the symbolic or special presence traditionally associated with major universities. Figure 3., Existing Campus Conditions illustrates the existing pattern of land use and other features of the Northeastern University campus.

Utilities

In general municipal and private utilities systems (including water, sewer/storm drainage and telephone), with the exception of steam generation, electric power and low voltage conduit, have adequate capacity to serve the campus and provide for growth in new facilities. Currently, University generated steam must be augmented with steam purchased from the Boston Edison system. Electric power has experienced power outages in the recent past. To remedy the problem, the University is presently undertaking a major upgrade to the power supply system to campus. This will provide adequate capacity for existing facilities as well as providing for increases in power demands. The low voltage conduit system is currently operating at capacity. With anticipated growth in demand (telephone lines, computer lines, etc.) upgrading of this system will be required in the near future.

Northeastern
• University •

CAMPUS MASTER PLAN

EXISTING CAMPUS CONDITIONS

CHILD DRUG USE

ACADEMIC ADMINISTRATION

1013

STUDENT HOUSING

R RECREATION/ATHLETICS

Parking Garage

PI PHYSICAL PLANT

LIBRARY

AND USE

PARKING

OPEN SPACE

VEHICULAR ROUTE

PEDESTRIAN BRIDGE

WALKING TIME
FROM ELL CENTER

UN(×)AGROUND TUNNEL



The 1957 season has been the
 best yet for the 1,000-acre farm. The
 crop is good and the weather is
 just what the farmer needs.

Northeastern University consists of eleven colleges:

- . College of Arts and Sciences
- . Boston-Bouve College of Human
Development Professions
- . College of Business Administration
- . College of Computer Science
- . College of Criminal Justice
- . College of Engineering
- . College of Nursing
- . College of Pharmacy and Allied Health
Professions
- . School of Engineering Technology
- . School of Law
- . University College

Each college offers a variety of courses of study.
The University offers Bachelor's, Master's and
Doctorate degrees in many fields.

Since 1898, when the University was founded as a YMCA
"Evening Institute for Young Men" offering part-time
courses in law, chemistry, architecture, automobile
mechanics and other practical arts, flexibility and
innovation have characterized the educational program
at Northeastern University.

Northeastern University is recognized as the leader
in Cooperative Education in the United States.
Cooperative Education at the University began in 1909
and is a unique program that places students in work
situations that are compatible with their career
objectives. This gives students the opportunity to
integrate their studies with experience in
educational, practical, and cultural learning
situations outside the formal classroom environment
and to earn money towards their educational expenses.

The University has also made a substantial commitment
to part-time programs of study which include a very
successful evening program and continuing education
classes at the main campus, suburban locations and
the downtown Boston campus. This allows the
University to provide a broad range of quality
educational opportunities to students of varied ages,
backgrounds, races and economic means.

Research activities at Northeastern University span a
large number of academic and professional fields
including physics, biology, computer science,
engineering, pharmacy and allied health, humanities,
human development, criminal justice and law. Some of
the notable existing research centers at Northeastern
University include:

- . Barnett Institute
- . Center for Applied Social Research
- . Center for Electromagnetics Research
- . Center for Research on Speech Process
- . Marine Science Institute
- . Center for Study of Sport in Society

Enrollment

Northeastern University experienced rapid increases in enrollment during the period from 1960-1980. By 1975, full-time undergraduate enrollment exceeded 15,000 students. Enrollments continued to expand and peaked in 1980 when over 19,000 full-time undergraduates were enrolled at Northeastern University with an overall University total of 43,184 degree and non-degree students.

Since 1980, overall enrollment has declined. In 1983, total enrollment was 36,559 students and in fall of 1986, total enrollment was 34,093 students. Enrollment declines in full-time undergraduates, part-time undergraduates and part-time graduate students have contributed to the overall reduction. However, since 1980 full-time graduate student enrollment has increased. The total number of graduate students, as a percentage of total University enrollment, has risen slightly in recent years, from 13 percent in 1981 to 15 percent in 1986.

The student enrollment profile in the fall of 1986 showed a total of 28,987 undergraduates and 5,106 graduate students. Part-time students accounted for 13,475 undergraduates and 2,953 graduate students. Over 11,000 of the part-time students are enrolled in the University College evening program.

Enrollments within each of the Colleges of the University have wide variations. In terms of undergraduates, the College of Business Administration has the largest enrollment, the College of Engineering has the second largest. Together they comprise over 50 percent of the full-time undergraduate enrollment.

ENROLLMENT AND ACADEMIC
CHANGE

Enrollments

Enrollment projections indicate that Northeastern University will continue to experience overall enrollment decline through the year 1995 as compared to the fall 1985 enrollment. This projection is primarily influenced by the declining college age population nationwide. However, enrollment projections are conservative estimates in that they do not include the potential influence of changes in program offerings, student retention rates, technology or University recruitment policies.

Based on projections made in the summer of 1986, a 6 to 11 percent reduction in total full-time undergraduate enrollment is anticipated from 1985 to 1990 (see Table 1). From 1985 to 1995 this reduction is expected to fall between 9 and 14 percent. From 1995 to 2000, median full-time undergraduate enrollment is expected to rise slightly compared to the median enrollment projected for 1995.

Table 1.

Full-Time Undergraduate Enrollment

Projected Number of Students (Fall)	<u>1986</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
Median	15,512 (actual)	14,480	14,230	14,440

The modest rise in full-time undergraduate enrollment expected near the end of this century is reflective of the ability of Northeastern University to identify and implement strategies which address enrollment issues. For example, increased focus on student recruitment in geographic areas of the United States which will produce more high school graduates than the Northeast could result in increasing enrollments.

Part-time and full-time graduate student enrollments are expected to show similar trends to the full-time undergraduate projections, in that they are projected to maintain their current level of 28 percent of full time undergraduate enrollment. One exception is the School of Law which has capped enrollments (450) and will remain at that level.

FACILITIES PROGRAM

Academic and Student Services

Northeastern University exhibits exceptionally high levels of utilization of existing academic and student services facilities. While current

facilities meet the basic needs of providing a quality education, instruction, office and study space are strained to the limit. As an example, operating from early morning through early evening classes, classrooms have utilization rates of 96 percent of available hours. This compares to a widely used campus planning guideline of 80 to 85 percent for utilization rate. While new buildings have been constructed in recent years (Snell 1983, Cargill 1982 and Kariotis 1982) and major building renovations have taken place (Cullinane and Ruggles), academic departments and administrative units still experience significant space shortages.

The continuing space shortage has led to ad hoc renovations and space reclamation that is poorly adapted to classroom and office space. In addition, this reclamation of space has impacted the already limited student study area, lounge space and other unassigned space. Classrooms are in such demand that many freshman classes are not prescheduled.

Another difficulty created by space shortages and high utilization is that these two factors constrain the ability of the University to perform appropriate day to day and major building maintenance tasks. Thus, the operational condition of facilities also suffers from the overall lack of space. In summary, the current space shortage impacts every section of the University and eliminates any flexibility in the use and scheduling of building resources.

The Campus Master Plan must provide for significant amounts of additional academic/student services space and research space not based on future enrollment increases but to make up for the current space shortage, research growth and to provide an overall improvement in instructional, administrative and research facilities. Classroom space is a high priority need with the demand for large classroom and lecture facilities being of particular importance. Near-term priority projects in addition to reprogramming certain buildings have been established to meet the substantial academic and student services space needs and include:

- . Resource Center (currently under schematic design, 240,000 gsf)
- . College of Engineering/Science (120,000 gsf of additional space)
- . College of Business Administration (110,000 gsf of additional space)
- . University classrooms

These priorities have been established in response to the substantial overall space needs, importance to the University community and specific facility needs of disciplines in the near term based on program demands.

Student Housing

Currently, the 4,000 students housed by the University represent 23 percent of the full-time student enrollment. Although Northeastern University will continue to be a predominantly commuter student institution, several factors suggest that the University should provide significantly greater housing opportunities for students. As a partial demonstration of potential demand, over 75 percent of the freshman applicants for fall 1985 entry indicated the desire for on-campus housing. As the college age population continues to fall nationwide, universities must provide facilities such as housing, as well as educational programs that place them in a favorable recruitment position. Retention of students is also influenced by housing opportunities for upperclass students. At Northeastern University, the housing issue becomes even more problematic with the general reduction in available private market rental housing in Boston and, more specifically, the Fenway and Back Bay neighborhoods. The University is also focusing on a broader geographic area of recruitment for students which will influence housing demand. Thus, in terms of enrollment rate and retention rate of students, provision of increased University housing opportunities is a priority program element for the Campus Master Plan.

The Campus Master Plan has established an ambitious program goal of adding 550 beds to the student housing supply by 1990. In the long term, toward the year 2000, a goal of an additional 950 new beds has been accommodated in the plan. In summary, this would bring the long-term University owned student housing total to slightly over 5,500 beds. Using a planning factor of 250 gsf/bed, the 1990 housing goal translates into 137,500 gsf of new housing facilities.

Housing for faculty, staff and married students is also a component of the Campus Master Plan. While less defined, housing for these groups and graduate students is recognized as a need which is typically more compatible with surrounding non-University operated housing and can be successfully integrated into the community.

Northeastern University currently has approximately 112,000 asf of indoor recreational/athletic space. Housed in four facilities (Cabot Gym, Barletta Natatorium, Dockser Hall and Matthews Arena), these facilities are shared by the student body, faculty and staff, alumni, varsity sports, intramural sports and community groups. While demand has grown steadily, new facilities or significant additions to existing indoor recreation areas have not been undertaken for over 15 years with the exception of the purchase of Matthews Arena. As a result, recreational and sports needs cannot be adequately met and this continues to present conflicts among user groups.

To address this University need, the Campus Master Plan provides for approximately 57,000 asf of new indoor recreational space in a multi-purpose facility. Included within the facility will be court space, multipurpose floor space and support facilities. A track and support uses for major interscholastic competition have been included as additions to the facility to address a long-standing need for schoolboy track meets in greater Boston. The addition of schoolboy facilities causes the need for a significantly larger building than that required to meet Northeastern University's exclusive needs, which substantially alters siting requirements for the building.

Outdoor recreation opportunities are severely limited on campus. Currently, outdoor sports are accommodated off campus at facilities in Dedham (track) and Brookline (football). The Campus Master Plan recommends accommodating the football stadium within close proximity to campus. The University track and proposed boathouse will remain at remote off-campus sites.

While recognizing the limited land resources of the campus in its urban setting, current outdoor recreational opportunities are not considered adequate for programmed activities or informal play. As the University increases its housing opportunities, outdoor recreation space demand will likely increase with an enlarged resident population. To increase outdoor recreational opportunities, the Campus Master Plan accommodates the following:

- . increased open areas for informal play and seating areas;

- . expansion of programmed outdoor spaces with durable surfaces and lighting to maximize the duration and intensity of use; and
- . cooperative efforts with neighboring educational institutions and City of Boston programs.

Research

Northeastern University currently has 125 investigators who use approximately 90,000 asf of research space. Projections by the University indicate the need for an additional 35,000 asf by 1990 with another 60,000 asf by 1995. The areas of investigation with significant growth potential identified by the University range from Social Science/Urban Research and Microelectronics, to such areas as Biotechnology and Information Science.

The Century Fund

The Century Fund program has been established for project fund-raising purposes. It has been developed interactively with this Campus Master Plan objectives and, in that sense, is a parallel documentation of University facility needs. New projects have been placed in priority groupings based on need and funding potential in support of a phasing program for the University. New facilities addressed by the Century Fund are listed below in order of priority:

Primary

- . Engineering Instruction/Research Centers/Science Facilities - 120,000 gsf
- . Parking Replacement
- . Reprogram Dodge Library
- . Resource Center - 240,000 gsf
- . Student Housing (550 Beds)
- . University Boathouse

Secondary

- . College of Business Administration Building - 110,000 gsf
- . Engineering/Science/Research Facilities - 40,000 gsf
- . Parking Replacement
- . Storage Warehouse - 60,000 gsf
- . Student Housing (450 Beds)
- . Student Recreation Complex/Indoor Track (joint venture with State)*

Tertiary

- . Conference Center
- . Football Stadium
- . Married Student and Faculty Housing
- . Natural Sciences Building
- . Parking Replacement
- . Performing Arts Center
- . Student Housing (550 beds)

*Student Recreation Complex/Indoor Track facility
priority is dependent on the timing of state funding.

RECURRENT THEMES

The following recurrent themes or observations which have been established by the planning process provided the University with a basis to formulate planning concepts for the Campus Master Plan.

1. The University is located in an area of Boston that is undergoing rapid change and will continue to change in the near future. This will exert strong external influences on the University through the development of City of Boston redevelopment parcels, neighboring institutional expansion programs and major mass transit facilities.
2. The University's current physical resources and facilities are strained to their limit in accommodating academic programs. These limitations severely restrict growth in critical areas of scholarly research.
3. The University faces a period of moderate enrollment decline as opposed to years of growth, creating a window of opportunity with respect to focusing on quality and long-term strategies for development. Facilities such as housing, laboratories and recreation will enhance the strategic goals of greater student retention and broader student recruitment.
4. Northeastern University, by sheer mass and size, is a major entity within the urban neighborhood; however, the campus lacks the symbolic or special presence typically associated with major universities.
5. Open space and quality pedestrian systems within the campus core are compromised by parking and vehicular traffic.
6. Northeastern University faces increasing competition for students in the future and should focus on improvements to the campus, educational programs and student services that enhance its competitive position.

III. PLANNING OBJECTIVES

The Campus Master Plan is founded on a series of objectives which address land use, circulation and parking, phasing and design. These objectives have been developed as fundamental principles to direct the preparation of the component pieces of the Campus Master Plan. While individual projects will be constructed within the overall framework of the Campus Master Plan, the following are key objectives, the integrity of which should be respected in any proposed change to the campus environment.

Reinforce Quality of Place

The plan must strive to create a distinctive, inviting campus setting that reinforces the quality of place at Northeastern University. This is especially important for the University to maintain a competitive edge in attracting a national and international student body.

Improvement in the quality of the Northeastern University campus environment can be achieved in three basic ways: facilities, open space and architecture. Through the provision of expanded facilities in concert with identified needs for instruction, research, housing, student services and recreation, the quality of the overall campus experience is enhanced.

Outdoor spaces at Northeastern University currently emphasize service to the automobile and utilitarian pedestrian connections. To improve quality, automobiles must be removed from areas suitable for seating areas, outdoor study, quiet reflection and pleasant and unencumbered pedestrian movement. Establishment of memorable outdoor spaces (in addition to the Quad and LeBeau Park) is a key element to improving the campus quality. This is achieved with improved plantings, lighting and seating opportunities for people in spaces with appropriate solar orientation.

While the existing Northeastern University architectural style brings consistency, it lacks organizational hierarchy. Selective new buildings should exhibit functional and symbolic design features (such as vertical elements) that bring distinction and variety to the campus at strategic locations. Buildings which provide the best opportunity to act as rallying points or focal elements include the Resource Center, the Recreation Center and the Student Center. Basic instructional facilities and housing should remain as background

buildings in terms of architectural features unless they occupy a prominent gateway location or include key administrative functions.

Establish Organizing Framework

The plan must establish a clear organizing framework based on a system of connected pedestrian open spaces. Further, the open space framework should extend to the campus edges at strategic locations to provide clear, inviting connections at important points of entry into the campus.

Currently, Northeastern University's campus boundaries are relatively undistinguished from the surrounding community. While the Campus Master Plan does not suggest creating a reclusive campus unavailable to the public, a much more strongly defined campus edge and identification of entry gateways is needed. It is important that the point where one has arrived on campus is well marked so that students, staff, people from neighboring communities, and casual passers-by recognize the transition to campus. This enhances the University identity and establishes open space that is more secure and useable and is less anonymous. Establishment of clear boundaries and entry gateways is particularly important for Northeastern University due to its urban setting and the inevitable creation of new public entries to campus by the multi-modal Ruggles Street MBTA station.

Internally, the organization of the existing campus is not as easily understood as it should be. The opportunity to improve the internal campus organization lies in the establishment of a pedestrian precinct based on a clear open space framework. This opportunity is especially timely and important for the future development areas on campus which are currently used as surface parking in the southwest section of campus. A series of confusing grids and poorly defined spaces (open parking lots) must be successfully resolved in this area as part of the organizing framework for future campus development. Simplicity is the key to providing a coherent system of organizing pedestrian open space corridors which have a hierarchy reinforced by design treatments (paving, landscape materials and signage). In this way, pedestrian movement through the campus is reinforced, dominant and easily understood.

Recognize Windows of Opportunity

The plan must take advantage of the window of opportunity presented by the relatively large and open land resource that exists in the form of surface parking areas south of Dana and Snell and generally to the west of Forsyth Street. In the University's history of rapid growth and the need to make rapid decisions to fit buildings on a lot-by-lot basis, it is unique that there is a land resource of sufficient dimension to allow for a comprehensive organizing framework to be established.

While Northeastern University's historical growth has been clearly incremental, the current lack of enrollment pressure and availability of University owned land (parking lots) presents a timely opportunity for the University to step back and focus on quality and basic organizing principles for future campus development. The achievement of quality suggests the provision of campus amenities (improved open space, landscaping, architectural rallying points, etc.) and student services (study space, lounge areas, recreation facilities, etc.) currently lacking due to past emphasis on developing instructional facilities.

The need for an open space framework which brings easily understood organization to the campus was documented by the previous planning objective, and warrants amplification here. With the availability of sufficient University owned land that remains uncommitted to buildings in the form of surface parking lots, Northeastern University has perhaps its last best chance to establish a much needed open space/pedestrian framework that brings organization to the campus that is easily understood.

Establish Practical, Affordable Phasing

The plan should concentrate on measures to accomplish a practical, affordable phasing sequence, avoiding significant demolitions for as long as possible, and prioritizing potential acquisitions in order to fulfill certain near-term space needs.

The phasing sequence for the Campus Master Plan must recognize the physical and operational constraints the existing campus development presents to construction of new facilities. The physical constraints include existing improvements (buildings, streets, parking areas, etc.) which are in locations which may be inconsistent with the long-term plan. To that end, while providing for high priority needs the phasing program should avoid demolitions and

displacements in the near term and focus on the ability of Northeastern University to provide a net increase in facilities. Operational concerns address the ability of the University to continue to function smoothly during each phase of the Campus Master Plan. Of particular importance is the maintenance of the current parking supply during all phases of future development. At some point in the future, additional structured parking will be necessary to intensify (vertically) the parking which presently occupies the developable land resource of Northeastern University. The phasing program must also address the University fund-raising abilities in relation to the capital expenditures required for each plan phase to insure that key facility milestones are financially achievable.

Commit to Early Campus Organization

The plan should organize future buildings and uses to achieve the maximum early effect in establishing the enhanced organizing framework.

The Campus Master Plan must grasp strategic opportunities early in the sequence of new buildings to maximize impact on the commitment to the open space organizing framework called for in the plan. This should take place on the project level as an extension to existing campus development. Conversely, the delay in using locations for new buildings as building blocks to establish a strong organizing framework runs the risk of losing the opportunity entirely because the University has a limited geographic direction in which to grow.

Recognize Planned Community Changes

The plan should recognize the evolution and expected changes in the land use pattern adjacent to the University.

The influences on the University created by new mass transit facilities along the Southwest Corridor are as yet untested and include a new campus entry at the Ruggles Street station; rehabilitation of the Mission Hill Housing Extension; and the inevitable development of numerous redevelopment parcels in the area. However, these external influences will contain both positive and negative characteristics. Thus, the Campus Master Plan must not ignore the land use dynamics external to the University but must respond by embracing positive change and by protecting the campus from potential negative influences.

Maximize Organization Efficiencies

The plan should improve the ability to rationalize and optimize space use within the campus based upon the goals of maximizing new organizational efficiencies and minimizing external costs.

New facilities as well as existing buildings which are reprogrammed must be sited in such a manner that they maximize opportunities to respond to the Academic Plan for the University. Location of new facilities should also relate to the availability of basic services and utility systems to minimize development costs.

IV. MASTER PLAN RECOMMENDATIONS

CAMPUS STRUCTURE

Land Use/Functional Relationships

The principal concept for the Campus Master Plan is the development of an open space mall that will link existing campus development with proposed new buildings and facilities. This will be the major organizing element for the whole campus and will run from the Resource Center located at the heart of the campus across Forsyth Street to the Parker Street campus edge.

The academic/administrative core area will remain essentially intact and expand to include new academic buildings east of Forsyth Street and the recommended acquisition of the Boston YMCA. This will consolidate academic/administrative uses as natural extensions to existing academic buildings east of Forsyth Street. West of Forsyth Street, the Ruggles Building and the Meserve/Holmes/ Lake/Nightingale complex as existing academic buildings provide the framework for locating infill academic buildings that frame the open space mall. The Columbus Place building will be used to house various administrative/office functions that do not require a central on-campus location. With these new facilities, academic/administrative uses currently in peripheral campus locations or in off-campus leased space will have the opportunity to be relocated into University controlled buildings.

University housing will be solidified into land use zones through the placement of new student housing buildings in locations adjacent to existing housing sites. North of Huntington Avenue, the existing housing sector will be expanded to include housing on Opera Lot, North Lot and the Cushing Hall site. To create another viable housing sector south of Huntington Avenue, housing facilities will be added in the area between West Apartments and Rubenstein/Museum Villa.

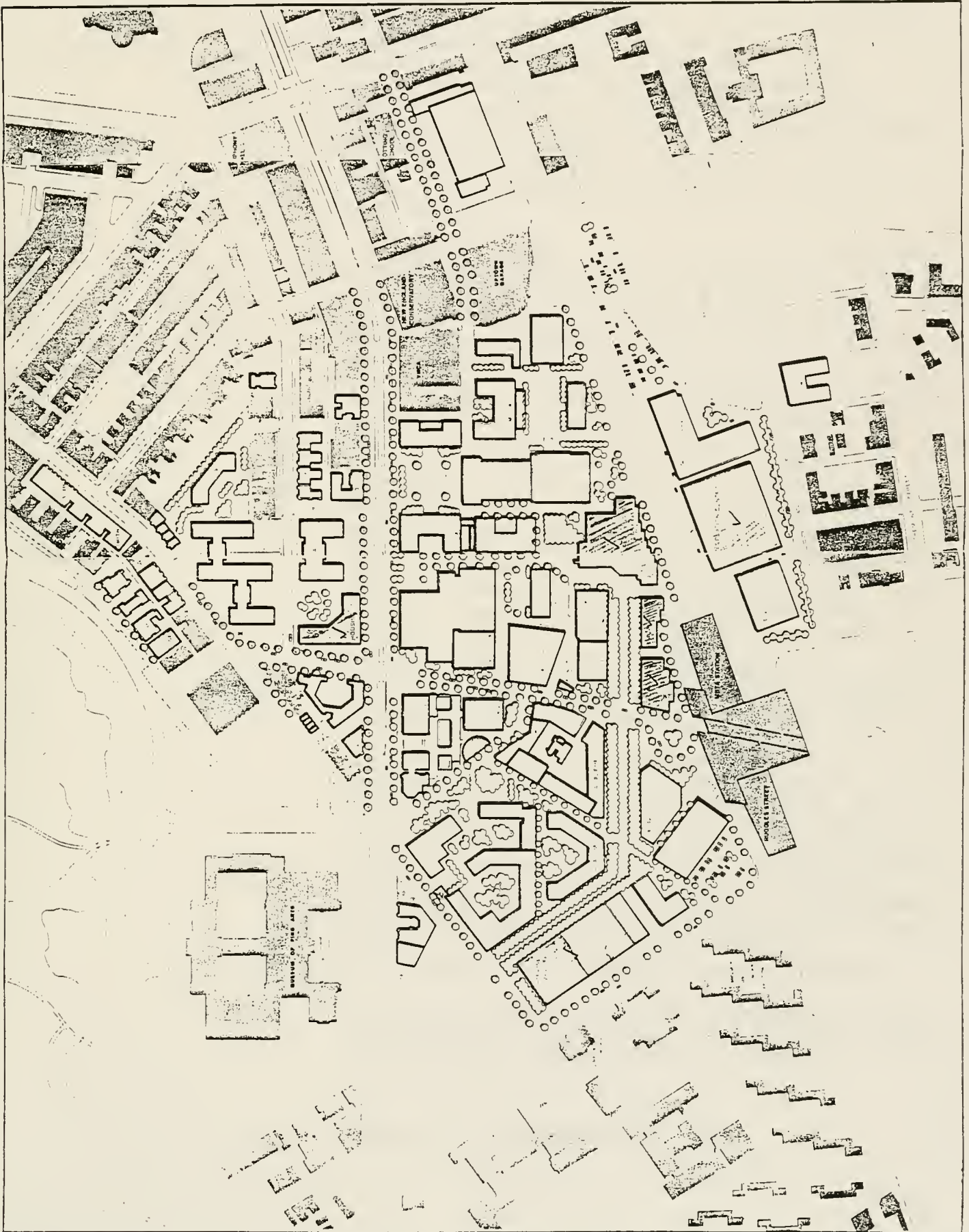
Parking facilities will be located on the campus edges to minimize the need for vehicles to penetrate the campus core. The bulk of parking spaces will be in parking garages because, as new buildings are added, they displace existing parking spaces and must be replaced to maintain the current parking supply.

In summary, the Campus Master Plan will reinforce and build upon the overall existing building use/land use pattern and create an open space mall that will act as the major uniting element on campus.

✓ Syn-plan

Figure 4.

Small Masterplan, Inc.
Planning Architecture Landscape Architecture
Civil Engineering Environmental Science
1000 Massachusetts Avenue, Suite 1000
Boston, Massachusetts 02115
Date: September 1982
NOTE:
RANGE AND COLOUR OF THIS MAP ARE UNO
BUT MUST BE CHANGED BY MONITORING



Open Space/Pedestrian System

The Campus Master Plan is founded on an open space system that will provide the essential structure and organization to the Northeastern University campus. While the open space system will provide visual and aesthetic relief to the dense building environment on campus, it also will act as the conduit for pedestrian movement through the campus and, in certain cases, emergency/service vehicle access. Finally, the open space system provided by the Campus Master Plan will respond to the basic need of improving the spatial quality of the University by establishing distinctive and inviting campus open space areas.

The major feature of the open space component to the plan is the establishment of an east-west oriented mall anchored at the new Resource Center site which will extend to the west across Forsyth Street to Parker Street. The mall exhibits a cross-sectional dimension (100 feet) that is necessary for it to function as the major organizational spine to the campus. The mall resolves the disparate geometry of streets and existing buildings west of Forsyth Street and creates logical building zones. The mall also integrates the new gateway entry at the Ruggles Street Station into the campus and creates a well defined gateway to the campus at Parker Street. An open lawn, broad walks and canopy trees along the edges will be used to provide definition to the mall space in concert with new and existing buildings which will frame and scale the space. Priority new buildings east of Forsyth Street (Resource Center, College of Engineering/Sciences) will present a critical early opportunity for Northeastern University to begin to implement the open space mall through building placements and designs that commit to the location and dimensions of the mall space.

The Campus Master Plan establishes the basic principle that the interior campus will be a pedestrian precinct, essentially free of the daily flow of cars to and from parking spaces. This includes minimizing parking spaces in Robinson Lot, Cabot Lot and the courtyard south of Hayden Hall, and presents the opportunity to improve the design qualities of the pedestrian connectors and courtyard spaces with landscape materials, seating and enhanced paving. In this way, the plan provides for functional as well as memorable spaces on campus.

The plan establishes a pedestrian movement network and an open space system that are functionally linked to provide mutual reinforcement in terms of

establishing a clear hierarchy of pedestrian/open space corridors and courtyards. While Forsyth Street will continue to provide vehicular access to the Ruggles Street Station, the Campus Master Plan defines Forsyth Street as a major north-south pedestrian corridor that also exhibits well defined crossing zones to improve east-west pedestrian movement across campus.

Extensions to the existing tunnel system will provide connections to a number of the new academic buildings and will enhance pedestrian circulation during inclement weather as well as improving handicapped access. Tunnel connections to the new Resource Center will be strongly considered as part of the plan. Existing subsurface utility systems (Stony Brook culvert, etc.) along Forsyth Street present significant constraints to the feasibility of pedestrian tunnel connections across this area and will require further assessment with specific building designs.

Vehicle Circulation/Service/Parking

Circulation

The Campus Master Plan recognizes that Northeastern University must maintain suitable commuter student access to campus in an area of Boston that experiences, and will continue to experience, traffic congestion due to heavy (non-University) commuter traffic.

Currently, this situation is most severe along the Ruggles Street corridor. However, the plan also recognizes that physical improvements to the street system along the Ruggles Street corridor will be required at some point in the future to support overall projected traffic growth and planned developments on Parcel 18 and the Wentworth/Childrens Hospital Corporation site.

The amount of future University related traffic is not expected to significantly increase with an increase in facilities on campus because new facilities are not driven by enrollment increases. Thus, in terms of external influences, the existing general pattern of regional campus access will remain essentially the same with some improvements expected along streets in the immediate vicinity of campus.

The Campus Master Plan directs commuting students and staff to and from the campus and University parking facilities along routes that avoid severely congested roadways. The existing major street system is

essentially fixed as part of the urban development and the plan is based on response to that system. Forsyth Street, which currently functions as the main access road to campus, will be downgraded to a limited role of providing access to the Ruggles Street Station, University visitor parking and service drives. In essence, the plan calls for an adjustment in campus traffic patterns that minimize penetration into campus by using roadways along the campus edges (Columbus, Parker, Ruggles, Huntington). This is accomplished, in part, by locating the bulk of parking facilities on the campus periphery and will improve the current situation related to traffic noise impacts on campus.

The plan also recommends the closure of existing public streets in the western sector of campus to include Leon Street, Field Street and Tavern Road. In this way, a more feasible geometry to the internal campus organization can be accomplished, suitable building sites are created and a quality pedestrian environment can be achieved.

Two factors are recognized by the Master Plan which may contribute to an actual reduction in the peak hour and total daily traffic demand for Northeastern University: The increased availability and convenience of mass transit, and the provision of new academic facilities on campus. New MBTA mass transit stations (Ruggles Street and Massachusetts Avenue) provide much improved access to the campus. However, the extent of their influence on reducing University related traffic can only be assessed through study of established ridership trends once the Orange Line is operating for a significant period of time. The addition of new academic facilities will provide the University with a greater degree of flexibility in scheduling which provides the opportunity to distribute the peak traffic demand times more broadly. Thus, peak hour University related traffic may be reduced.

Service

Service access patterns to existing campus buildings will remain essentially the same. However, internal campus access roads will be transformed to indicate pedestrian dominance in design and vehicular access as secondary. Forsyth Street, Greenleaf/Leon Street and St. Botolph Street will function as major service spines, with various smaller service drives accessing off these corridors to individual buildings. On-campus physical plant and maintenance facilities relocated from 26 Tavern Road and the Parker Building will be directly accessed off a new service drive from Ruggles Street.

Parking

The Campus Master Plan recognizes that the University must continue to provide adequate parking for commuting students and staff. The plan will maintain the current supply of approximately 3,300 parking spaces during all phases of development, the vast majority of which will ultimately be provided by parking garages. Parking will gradually be eliminated from interior campus courtyard spaces. While providing the opportunity to create a viable pedestrian precinct on campus, elimination of interior campus parking will also effectively increase the amount of parking that must be replaced as the Campus Master Plan is implemented. The plan also recognizes the major improvements to mass transit which provide opportunities to access the campus by the relocated Orange Line stations along the Southwest Corridor project (Ruggles Street, Massachusetts Avenue). The University should document future ridership trends over a period of time to determine if any material effect on parking demand is forthcoming from the mass transit improvements. In this way, the University will assure that the parking program on campus is synchronized with demand and will result in an efficient and effective program.

The parking strategy established by the Campus Master Plan has three basic elements:

1. Locate the bulk of parking in parking garages on the campus periphery and eliminate all but service and visitor parking within the campus core. Parking garages in addition to the 995 car garage on Columbus Lot will be located along Ruggles Street, Columbus Avenue and Gainsborough Street (possible Uptown Garage acquisition). Parking will also be included in the housing project proposed on Opera Lot.
2. Provide a geographically balanced parking supply that responds to commuting student origins and street system constraints. The parking garages will be distributed in three sectors of campus (west of Forsyth Street, south of the Southwest Corridor and east of existing campus development in the Uptown Garage) to evenly distribute the University traffic destinations. This will also provide parking in locations convenient to all campus areas.
3. Provide structured parking only when necessary in increments that are cost effective (a minimum of 400 to 500 spaces). All new building projects on campus after construction of the Resource Center will require parking space replacement because

Northeastern University

CAMPUS MASTER PLAN

CIRCULATION PLAN

-  PEDESTRIAN ROUTE
-  VEHICULAR ROUTE
-  SERVICE ROUTE
-  SERVICE ACCESS
-  MAJOR PEDESTRIAN ENTRY POINTS
-  HANDICAPPED PARKING

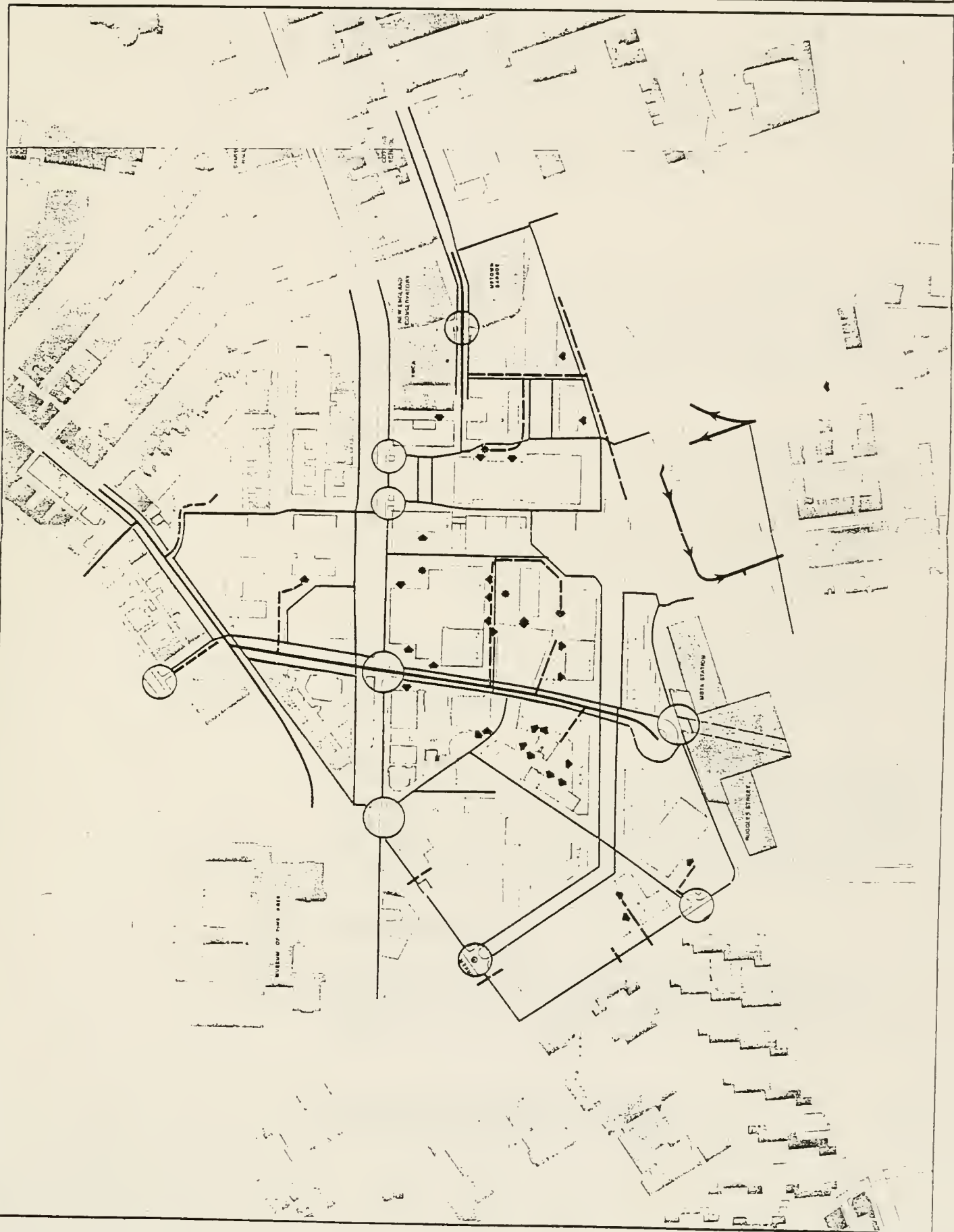
NOTE:
ALL MAJOR WALKWAYS DESIGNED
TO ACCOMMODATE EMERGENCY
MAINTENANCE TRAFFIC.

Figure 6.



Sorell Associates, Inc.
Planning Architectural Landscape Architect
Civil Engineering Transportation Engineer
1000 Massachusetts Avenue, Suite 1000
Boston, Massachusetts 02118
Date September 1987

NOTE:
SHOWS BUILDINGS ON THIS MAP ARE UNDO
BUT NOT OWNED BY BUREAU OF THE CITY
OF BOSTON



existing surface parking lots will be displaced by the new academic and housing facilities. The plan prioritizes the possible acquisition of the Uptown Garage to provide a near-term net increase (300+) in parking spaces with no negative impact on the current campus land resources or surface parking supply. This will allow high priority academic projects to be built (Engineering/Science, Instruction/Research) without construction of a new garage on campus. In essence, this will defer the commitment of scarce campus land resources, and financial resources until a future date with the benefits of an additional five years of parking demand trend analysis and planning.

Utilities

Electrical Power

Major improvements to the existing system are planned to alleviate power deficiencies and to provide capacity for future growth in facilities. Thompson Engineering Co., Inc. is presently under contract for design of the improvements, which is programmed for construction beginning in 1987.

The planned improvements consist of the construction of a third 13.8 KV Edison feeder to supplement the existing two feeder lines. Presently one feeder is used to serve the campus while the other functions as a backup. Planned improvements reconfiguring the two feeders will serve the campus effectively, doubling the available power supply, and the third feeder will act as a backup. This will provide ample power to serve all existing and proposed facilities.

Some areas of campus are currently serviced by existing overhead or underground networks, rated at 4160 volts (i.e., the areas west of Greenleaf Street). These areas will remain on the existing power grids.

Three existing ductbanks are available for serving planned university facilities south of the Southwest Corridor. They are not currently in use and consist of empty conduits. However, they will be wired and put into use as University development occurs south of the Southwest Corridor. These facilities are shown in Figure A1. (in the Appendix.)

Low Voltage Conduit

This conduit system presently runs in the same ductbank as the 13.8 KV power lines. It contains telephone, fire alarm, educational TV and a computer line.

All components of the existing system adequately serve existing facilities but are operating at physical capacity. Hence, there is currently a need to place additional low voltage lines in service and this need will continue to increase with additional campus development. To provide for this need a parallel ductbank is recommended to be installed adjacent to the existing ductbank. The low voltage system would then have adequate physical capacity to accommodate the future campus development. These facilities are shown in Figure A1. (in the Appendix.)

Sanitary Sewerage and Storm Drainage

Accommodation of campus expansion will essentially be provided by extension, removal or re-alignment of existing pipes or culverts as shown in Figure A2. (in the Appendix). The receiving mains consist of several large channels and/or pipes. Prior to sewer connection of a specific project, the Boston Water and Sewer Commission will require an engineering analysis to demonstrate that the existing system can handle the maximum flows from the proposed development.

Based on the relatively small sewage discharge of the planned development in comparison with the large capacity of the receiving mains, it is likely that the proposed University development could be connected to the City Sewerage System with no major improvements necessary.

No new impacts are expected on the existing drainage system because the proposed developments will not increase the amount of impervious surfaces on campus. Therefore, overall increases in drainage flows from the campus are not anticipated. Figure A2. (in the Appendix) shows the major features of the drainage system for campus.

Water

While water pressures in the existing system have occasionally dropped to an undesirable level during peak demand periods in the summer months, the overall pressures and flows are considered adequate. To accommodate the proposed University development, existing mains will be extended and/or re-aligned as shown on the attached Water Plan map. Since the existing mains in the development vicinity are large, it is anticipated that the development will not have a major impact on the water system, and no upgrade of city mains is anticipated. Figure A3. (in the Appendix) illustrates the major features of the water service system for campus.

Natural Gas

Natural gas is used on campus for heating individual buildings and emergency power generation, and the system is considered adequate.

The proposed University development will be served by making the required pipe extensions, removals or realignments. No improvements to the existing distribution system are anticipated. Figure A4. (in the Appendix) shows the major features of the natural gas supply system for campus.

Steam

The University steam requirements are presently served by three sources: the University's boiler plant and associated pipe network; Boston Edison Co. steam coming from a 10" line on Huntington Avenue; and individual boilers serving individual buildings. The University's boiler plant and pipe network are sized for expansion and the University intends to expand their steam system, as considerable long-term cost savings would result. No supply-capacity problems have been reported in the existing system.

The Master Plan extends the University's steam system where possible, and uses Edison steam where necessary. Facilities south of the Southwest Corridor will utilize an independent heat source, such as individual boilers. Figure A5. (in the Appendix) illustrates the major features of the steam supply for campus.

Accommodation of University program needs in the context of the Campus Master Plan has been achieved through a strategic combination of new construction, reprogrammed space, acquisitions and displacements. The plan has been developed at a certain point in time based on a set of facts, assumptions and priorities. It is realistic to expect that as the University evolves, the plan will evolve and be adjusted in response to both external and internal changes. While the plan has presented specific building locations, open space and pedestrian and vehicular circulation patterns, the University recognizes that coordination with government agencies, neighboring institutions and community groups will achieve maximum mutual benefits for the campus and environs, especially with regard to transportation and potential joint development opportunities. The following listing of program elements has been prepared by function and is not intended to be a prioritized order.

Resource Center

As a high priority project for Northeastern University, the Resource Center offers the best and most appropriate opportunity to establish a functional and symbolic center for the campus. The facility will be located southeast of the Ell Center forming a courtyard space with Hayden Hall and the Snell Building. Including some 250,000 gsf, the Resource Center will provide for all traditional library functions, study space, long-term stack space needs, offices and research support functions. The construction of this facility will replace and substantially exceed the functions currently provided by the Dodge Library, which will be reprogrammed for academic/administrative space. The Resource Center will also act as the anchor to the open space mall linking the Ruggles Street station and the new academic buildings in the western sections of campus with the existing campus academic core.

College of Engineering/Sciences

Laboratory, office and classroom space for engineering and the sciences is of high priority for the University. Two new buildings totalling 120,000 gsf are located south of Dana and Snell across the open space mall, to accommodate these needs. The benefits of this location are threefold. First, it places new facilities in close proximity to existing engineering buildings which maximizes affinities between the engineering disciplines and the

sciences. Second, it provides Northeastern University with an early opportunity to establish the basic dimensions and location of the open space mall. Third, in this location, the buildings provide a substantial increase in academic space while minimizing the impact on existing parking spaces and consolidating the academic core. A constraining factor at this location is the potential for adverse vibration conditions caused by the Southwest Corridor mass transit.

Long-term projects to provide additional engineering/sciences space include the redevelopment of the Forsyth Building. Options include renovating and adding to the existing structure or demolishing the existing structure and constructing a new facility.

College of Business Administration

The College of Business Administration is primarily housed in Hayden Hall at present. The construction of the Resource Center will make the Dodge Library available for re-programming for use by the College of Business Administration as the prime user in addition to the facility in Hayden Hall. The plan also accommodates a longer term option for a new building (over 110,000 gsf) which could provide for the College of Business Administration space needs in a single facility west of Forsyth Street. Located in conjunction with the Meserve/Holmes/Lake/Nightingale complex, this facility would have a prominent location on the open space mall.

Performing Arts Center

As a long term "special" building need, the plan locates the Performing Arts Center at the new gateway created by the Ruggles Street station. Providing for theatre performances and enhanced teaching facilities in the performing arts, this facility is located in close proximity to the Ruggles Building which takes advantage of the affinities between art and performing arts provided by the two buildings.

Academic Buildings

Over time the University will continue to evolve and adjust to new program demands, enrollments and unanticipated external influences. Thus, the plan provides for long-term academic growth by locating

buildings in a rational pattern that create a logical extension to academic uses and demonstrate a commitment to the organizing open space framework.

University Housing

New housing on campus is located to achieve vital and high quality housing environments. A variety of lifestyles is accommodated by providing the opportunity for a variety of housing types (apartments, suites, dorms). The housing program (550 new beds by 1990; 1,500 total new beds in the long-term) is accommodated by new construction north and south of Huntington Avenue and acquisition of the YMCA. Acquisition of the YMCA will provide an additional 150 beds. Two buildings north of Huntington Avenue have been located on existing parking lots (Opera Lot and North Lot) to solidify that housing sector and will provide an estimated total of 600 to 650 new beds. South of Huntington, in addition to the acquisition of the YMCA, new housing facilities will be constructed in association with the West Apartments to create a viable housing sector to campus with the potential to accommodate in excess of 1,200 new beds depending on the exact project development criteria.

Athletics and Recreation

The major features included in the plan for athletics and recreation is the recreation center/schoolboy track which will be located to the south across the Southwest Corridor from the campus core. This facility (totaling approximately 80,000 gsf) will provide for intensive indoor recreation activities for the University and schoolboy track facilities. As a result, Cabot Gym and Barletta Natatorium facilities can be reprogrammed to focus on instruction and team practice. Thus, the new facility will provide additional space as well as the opportunity to segregate user groups to mitigate existing conflicts.

Outdoor recreational needs are addressed within the open space framework created by the plan. The pedestrian courtyards and open space mall substantially increase the opportunity for informal play on campus. In conjunction with new housing developments, lighted outdoor spaces with durable surfaces will be included to provide for intense activities (tennis, volleyball, and basketball) and maximize the time they will be available.

The University should pursue the relocation of the football stadium from Parsons Field in Brookline to a location in close proximity to campus. The most feasible approach is to develop a stadium facility cooperatively with an adjacent institution (Wentworth, Roxbury CC) or the City of Boston (Campus High playfields site). In this way, a quality facility which benefited both the community and the University could be achieved.

Another planned off-campus facility is the University Boathouse. Located on the Charles River, this facility was recently approved by the State Legislature and the Governor and will provide for intercollegiate as well as recreational rowing opportunities.

Parking Structures

Parking garages will provide substantial additions to the building environment of the campus. The garages are needed to replace spaces lost as the University builds needed academic, housing and administrative facilities. Thus, intensification of parking is required.

The potential acquisition of the Uptown Garage would add over 300 net new spaces to the University controlled spaces. The next garage site is located along Ruggles Street and Parker Street. Access is provided from Parker Street with secondary access (right-hand turns only) provided from Ruggles Street. Ultimately this site will accommodate 1,000 cars but it is likely to be built in cost effective phases. The final parking garage site is located adjacent to the recreation center/schoolboy track. As a long term option, this site will accommodate up to 400 cars.

PHASING

The phasing program establishes the sequence and overall timing of the steps necessary to achieve the goals and objectives of the Campus Master Plan. Priorities have been established through the planning process based on University needs, physical opportunities and constraints and fund raising capabilities.

The phasing program recognizes that the public approval process for individual projects is a key element in maintaining the integrity of the plan during each phase. To that end, implicit in each

phase of the plan is coordination and review with the City of Boston, appropriate agencies and the community. Furthermore, periodic updates to the Campus Master Plan are expected to be undertaken.

It is extremely important that the initial projects within the phasing program present solutions to the existing space shortages on campus. Of equal importance is the early commitment to establishing the Campus Master Plan open space framework through careful location and design of high priority projects.

Phasing for the Campus Master Plan is based on five key strategies:

1. Accommodate high priority facility needs in the near-term phase in concert with The Century Fund fund-raising objectives;
2. Retain the current surface parking land use west of Forsyth Street to the extent possible through the near-term phase;
3. Prioritize acquisitions that provide for net increases in physical plant, and defer required demolitions to later phases of the plan;
4. Defer construction of new parking structures until the mid- to long-term phase; and
5. Maintain the existing supply of parking spaces during each segment of the phasing program.

The phasing program, illustrated in Figure 7., establishes achievable goals during each of three broad planning phases defined as follows:

- . Core Consolidation (near-term)
- . Campus Expansion (mid-term)
- . Campus Maturity (long-term)

Core Consolidation

The Core Consolidation phase targets the near-term planning horizon for implementation. Of highest priority is the completion of the Resource Center. Once the Resource Center is in operation, it allows the Dodge Library to be reprogrammed for the immediate needs of the College of Business Administration and general academic space needs. Independent of the Resource Center in terms of timing, new College of Engineering/Sciences facilities are included within the near-term phase.

Based on the final outcome of a subsurface vibration analysis for the proposed site south of Dana/Snell along the open space mall, the University should maintain the option for satisfying engineering program needs by redeveloping the Forsyth Building site. The timing of this second option, however, would be dependent on the completion of the Resource Center prior to the initiation to provide replacement space for the current users within the Forsyth Building.

Student housing expansion of approximately 550 new beds is proposed in the near-term phase by construction on the current site of the Opera parking lot (400+) and acquisition of the YMCA (150 new beds). Parking supply is maintained at current levels through the near-term phase by acquiring the Uptown Garage (300+ spaces) and providing replacement parking under the proposed housing on Opera lot.

Commitment to the open space mall will be established in this phase with the placement of the new Engineering/Sciences Building and the Resource Center. Elimination of parking south of Hayden Hall within the new courtyard space will also be accomplished.

Campus Expansion

The Campus Expansion phase targets the mid-term planning horizon and focuses on development west of Forsyth Street for new academic, housing and parking facilities. Mid-term phase projects include a new building for the College of Business Administration (80-120,000 gsf) along the open space mall and expanded housing opportunities adjacent to the West Apartments (450+ beds). Parking displaced by the above developments will be replaced by the first phase (estimated at 500 spaces) of a parking garage located along Ruggles Street. This will maintain the level of parking spaces during development.

The Recreation Center/Schoolboy Track facility, a joint project by the University and the State, will be constructed on Columbus Lot during this phase. This project could occur earlier, but is dependent on the timing of State funding. The project will include replacement parking spaces for those displaced by the footprint of the facility.

A major segment to the open space framework will be formed by this phase of the plan by extending the open space mall across Forsyth Street. The College

of Business Administration Building and the parking garage will provide the cornerstones to formulation of this segment of the mall.

Campus Maturity

The Campus Maturity phase includes long-term projects which will essentially complete the major physical needs that can be currently identified by the University. Major features of this phase include provision of additional academic buildings west of Forsyth Street, a Performing Arts Center located adjacent to the Ruggles Building and redevelopment of the Forsyth Building and Forsyth Annex. Student housing is expanded by completing the housing sector associated with the West Apartments and providing housing on the North Lot site. A total of 500+ beds will be included to reach long-term housing goals depending on the number of beds provided in earlier phases.

Demolitions required as a result of the Campus Maturity Phase projects include Forsyth Annex, Parker Building, 26 Tavern Road and the African American Institute Building. The plan provides for on-campus replacement space for all of these facilities through new construction and/or reprogrammed facilities. Plant maintenance and physical plant offices will be relocated to a site along Ruggles Street; African American Institute facilities will be relocated; and the availability of general academic/administrative space will provide replacement space for Forsyth Annex and Cahners Hall users.

Parking supply is maintained at current levels with the construction of the final phase (approximately 500 spaces) of the parking garage at Ruggles Street and subsequently a parking structure (up to 400 spaces) adjacent to the Recreation Center on Columbus Lot.

The open space framework will be in place and parking spaces eliminated from the interior portions of the campus during this phase. Because this phase reflects the physical maturity of the University, rehabilitation of existing landscape improvements and maintenance are key features to the open space plan.

Northeastern University

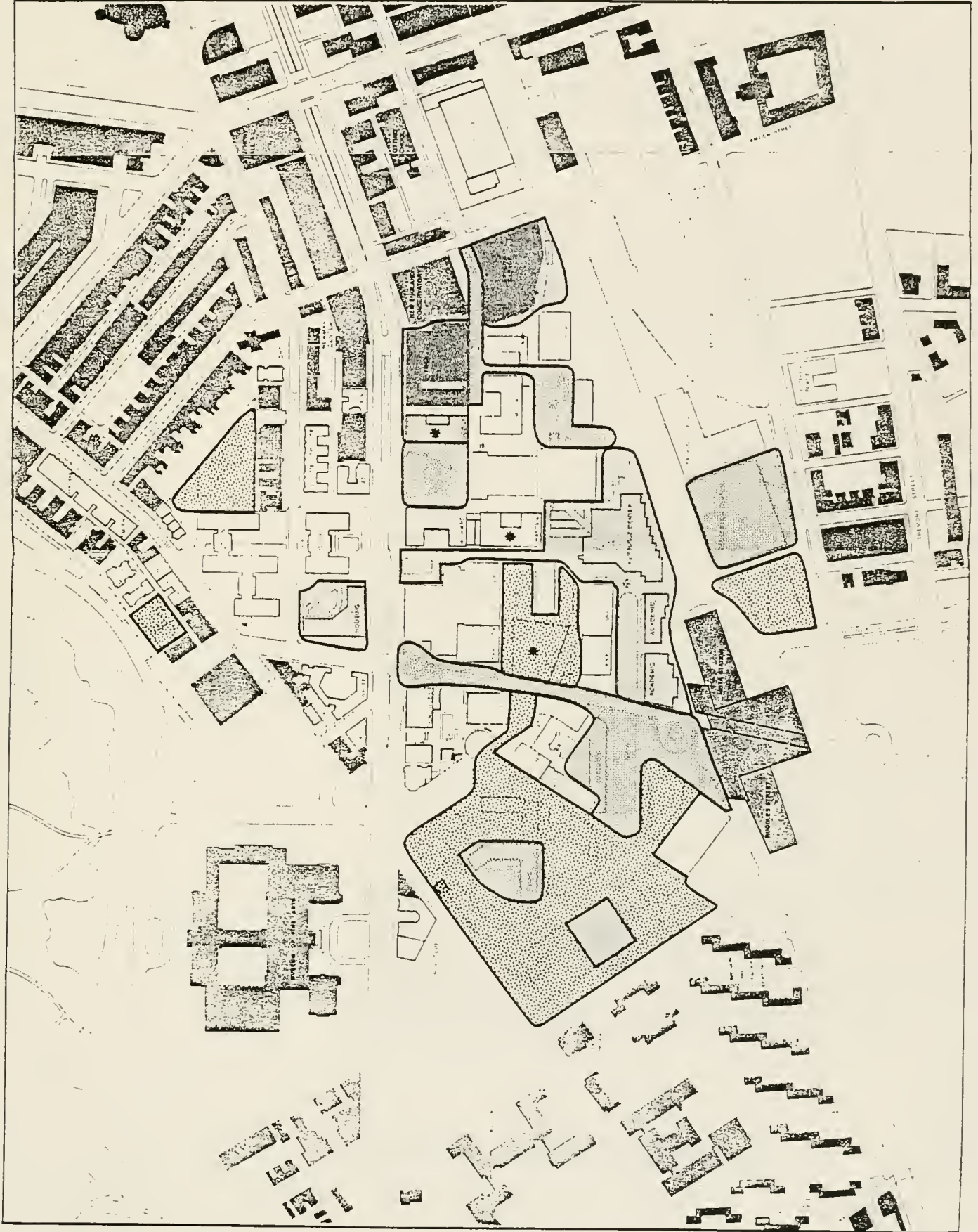
CAMPUS MASTER PLAN

PHASING PLAN

-  NEAR TERM
CONSTRUCTION
-  MID TERM
CONSTRUCTION
-  LONG TERM
CONSTRUCTION
-  MAJOR RETROPROGRAM OF
EXISTING BUILDINGS

Figure 7

North Arrow
 Planning Architecture: Landmark Architecture
 Civil Engineering: Environmental Planning
 Data: Northeastern University
 Date: November 1981
 Scale: 1/4" = 100'
 Notes: 1. This plan is based on the 1977 and 1980
 2. All buildings shown are existing or planned
 3. All buildings shown are existing or planned



INTRODUCTION

The Master Plan establishes a comprehensive framework of land use relationships, open space, circulation and future building locations. The purpose of the design guidelines is to provide performance criteria to direct the implementation of the Master Plan. Therefore, the overall objective of the design guidelines is to insure that specific projects are planned and constructed within the overall intent of the Master Plan. This approach will guarantee continuity and clarity of Northeastern University's campus environment as succeeding development phases are completed.

OPEN SPACE

As emphasized in the Master Plan, the open space system provides the framework for the organization of the current and future phases of the campus. Because the quality of the open space is so important to creating a strong identity and structure to Northeastern University's campus, the design becomes an extremely critical factor. The design of all portions of the open space should incorporate the following objectives:

- . The design of specific outdoor spaces and corridors should reinforce the anticipated functions and activities for each area.
- . The design should create a sense of organization, security and orientation throughout the campus.
- . The design of the open space should possess an aesthetic quality that enhances the University setting. The atmosphere should communicate to those at the University as well as to the surrounding community a vitality and character appropriate for the campus environment.
- . The open space should establish a sense of place to the overall campus within the context of its immediate neighborhood as well as the entire city. This image should be recognizable as belonging to Northeastern University and should also unify the various portions of the campus.

Several broad categories of open space have evolved during the development of the Master Plan. While integral to the overall character and image of the University, each type of space has design requirements that should be fulfilled in order to accommodate specific functions and activities. The function or purpose of each space refers to the campus-wide issues of image, organization, unity,

security and style. The activities relate to pedestrian and vehicular circulation, passive and active recreation, relaxation and communication.

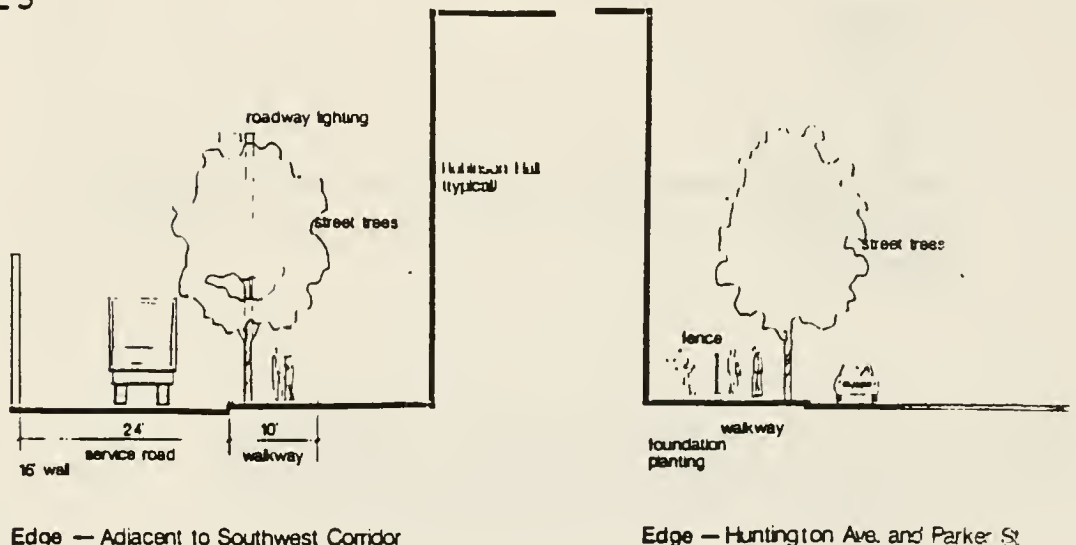
Many open spaces currently exist on the campus but are often underutilized as open space because of inadequate design or inappropriate useage. The Master Plan design guidelines provide a direction for re-ordering the existing outdoor spaces and creating a variety of new outdoor spaces. The result will be a coherent, well organized and pleasant campus.

The following discussion is a general description of the types of open space and the role that each plays within the Master Plan. Table 2., Open Space Design Guidelines is keyed to the Open Space Design Guidelines Concept Plan Map (Figure 9). The table identifies the types of open space and locates discrete areas on campus that are components of the plan. In addition, Table 2. describes the function and design intent of each open space area and sets forth a recommended course of action.

The Campus Edge

The edge of the University's campus is formed by several busy urban streets as well as the Southwest Corridor. The neighborhood context is richly varied including several cultural and educational institutions, residential districts, existing and proposed retail and office development, subway and trolley routes and major public parks. The edge of the campus is mostly indistinguishable from its surrounding environment.

Figure 8a.
CAMPUS EDGES

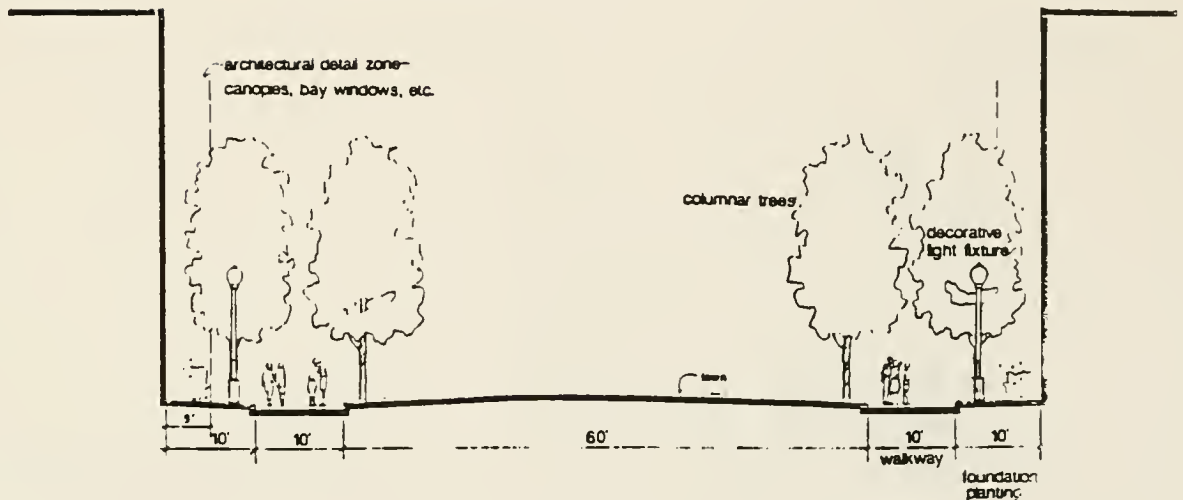


It is important to upgrade the boundary of the University to project a positive public image as well as to establish a feeling of unity from within the campus. A consistent edge with entrances will provide better direction to pedestrian and vehicular traffic. A vocabulary of tree planting, fencing, night lighting and signage will create a desirable public ediface compatible with the diverse community context.

The Mall

The Mall is the proposed centerpiece for the westward expansion of Northeastern University's campus. It not only serves as the organizational structure for circulation and new building locations, but provides the opportunity to create the most imageable open space on the campus. The mall will link the proposed and the existing pedestrian circulation systems at the point of terminus in front of the Resource Center. When combined (the mall terminus, the new Resource Center and the major pedestrian connection), the elements form the new center of the campus. The western terminus of the mall at Parker Street establishes close links to Wentworth Institute and the Museum of Fine Arts.

Figure 8b.
THE MALL



The mall will have a formal character that emphasizes landscape. Framing a broad, central lawn, a double row of upright trees will march down either side of the mall. Walkways, spanning the length of the Mall, will be shaded by both double rows of trees.

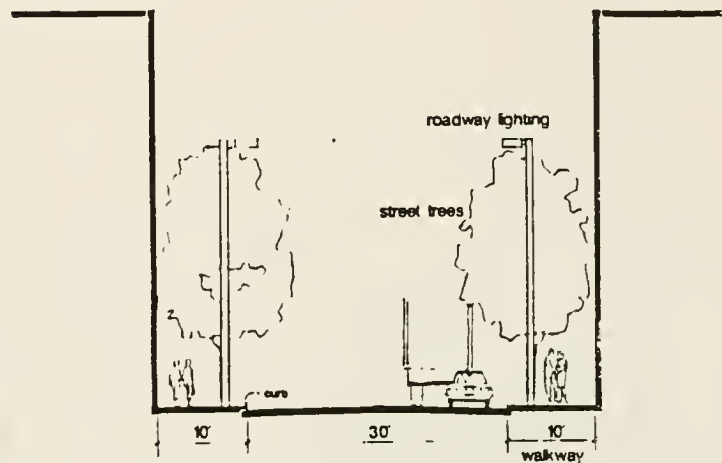
The open landscape character will encourage passive recreation and relaxation, while the linear organization will direct the pedestrian circulation. The mall will also become the campus address for all buildings located on its edge.

Connector Spaces

Much of the open space in the current and the proposed phases of the Master Plan is utilized for pedestrian and vehicular circulation. The connectors are in a linear organization reflecting the patterns of the surrounding city streets and buildings. They link the University with the city street and walkway system as well as tie together the interior portions of the campus.

Currently a potentially unsafe mixing of pedestrian and vehicular traffic often occurs. The distinction between the two is unclear. The paved streets behind the YMCA and Cabot Hall are examples. The result is that the aesthetic quality of the connectors is often unpleasant, detracting from the overall campus setting.

Figure 8c.
FORSYTH STREET

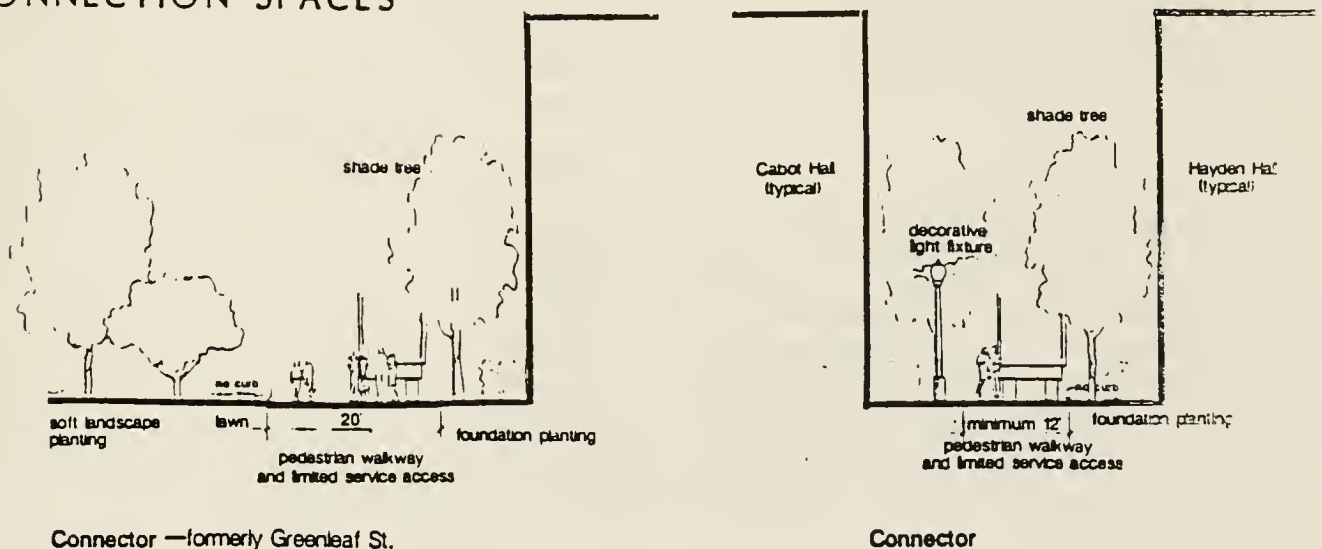


Connector — Forsyth St.

As the Master Plan becomes implemented, most of the vehicular traffic will be kept at the periphery of the campus. The interior spaces of the University will become more of a pedestrian precinct. Most of the major connectors in the existing portions of the campus will continue to have limited vehicular traffic associated with service, emergency, maintenance and visitors, such as Forsyth Street. In those areas, the pedestrian areas should be highly differentiated from road surfaces to make the separation clear. When space is available, formal tree plantings should be utilized along connectors to emphasize the circulation flow and the strong architectural edge created by the adjacent buildings.

West of Forsyth Street, most of the connectors are primarily for pedestrian circulation with some maintenance and emergency vehicles. Because these connectors are predominantly in more open areas, the landscape should have a softer, more naturalistic character. Architectural edges along pathways should still receive a more formal landscape treatment, such as the walkways adjacent to Holmes and Stearns. With the use of special paving, landscape materials, and outdoor lighting in conjunction with well defined circulation routes, the connectors should become a positive feature helping to create a unified and imageable campus setting.

Figure 8d.
CONNECTION SPACES



Courtyards

In many areas of the existing and proposed phases of the campus, the more narrow connectors open into courtyards. Generally rectilinear, these spaces are outdoor rooms defined by the building facades. The courtyards tend to be among the sunniest areas in the open space system. The Quadrangle along Huntington Avenue at the Ell Building illustrates how successful and necessary these spaces are to the vitality of student life on campus. With almost too much use, "The Quad" serves not only as a hub of pedestrian activity but also as a highly imageable space, emphasizing the surrounding University buildings.

However, most of the existing courtyard spaces are inappropriately consumed by parking and vehicular circulation. The parking filled courtyard formed by the facades of Peabody, the Ell Student Center, Robinson and Hurtig is a typical example of this condition. All parking and unnecessary vehicular circulation should be eliminated from the remaining courtyard spaces to create additional pedestrian areas within the dense, central section of the campus.

Each courtyard in the existing and proposed academic areas should be designed to have an urban character. Much seating, decorative paving, lighting, plant materials and special features such as sculpture or fountains should be incorporated into the design. The courtyards at the proposed student housing should emphasize an informal, park-like landscape to impart a strong feeling of quiet and relaxation associated with the home. The creation of a series of courtyards will claim the University open space for the pedestrian and provide the basis for the establishment of a unified and highly imageable campus setting.

Gateways

In association with the creation of an imageable campus edge is the development of a series of gateways or entrances. Besides identifying the entrance points, the gateways have a symbolic role as "the gates to higher education". The design of these features provides the opportunity to create campus entrances of landmark stature enhancing both the University and the surrounding community. The design of these architectural features should incorporate plant materials, lighting and signage.

Northeastern

• University •

CAMPUS MASTER PLAN

OPEN SPACE
DESIGN GUIDELINES
CONCEPT PLAN

- EAT CAMPUS EDGE
- B1 CAMPUS GATEWAY
- MALL
- D1 CONNECTORS
- B1 COURTYARD

NOTE: LETTER AND NUMBER CODES ARE
KEYED TO TABLE 3, OPEN SPACE
DESIGN GUIDELINES

Figure 9



Source: Massachusetts Dept.
Planning and Development, University
Campus Master Plan, 1987
Date: November 1987
Scale: 1/4" = 100'
Notes:
1. This plan is a conceptual design and should not be used
for final design or construction.
2. All rights reserved by the University of Massachusetts.



TABLE 2. OPEN SPACE DESIGN GUIDELINES

Open Space ¹	Location	Function/Design Intent	Recommended Action
CAMPUS EDGE			
A-1	Huntington Avenue (North Edge)	<ul style="list-style-type: none"> Define and unify campus edge to be identifiable as Northeastern University (campus image). Direct flow of pedestrian and vehicular traffic to specific campus entrances. 	<ul style="list-style-type: none"> Plant street trees along entire edge. Where buildings are setback from sidewalk edge, install iron fencing. New buildings should be built to backedge of sidewalk to match existing setback of majority of buildings along Huntington Avenue.
A-2	Huntington Avenue (South Edge) Parker Street (Between Mall & Huntington)	<ul style="list-style-type: none"> Define and unify campus edge to be identifiable as Northeastern University (campus image). Direct pedestrians and vehicular traffic to specific entry points. 	<ul style="list-style-type: none"> Plant street trees along entire edge of campus. Continue iron fencing along entire edge.
A-3	Parker Street (Between Mall & Ruggles Street)	<ul style="list-style-type: none"> Define and unify campus edge to be identifiable as Northeastern University (campus image). Direct flow of pedestrian and vehicular traffic to specific entry points. Create more pleasant pedestrian environment. Establish open space link to Wentworth Institute. 	<ul style="list-style-type: none"> Plant street trees along entire edge except at Mall entrance. Install iron fencing from Huntington Avenue to Mall entrance. Provide garage setback to 30' feet from Parker for additional landscaped area. Extend Mall tree planting along end of parking garage to Ruggles Street.
A-4	Ruggles Street	<ul style="list-style-type: none"> Define and unify campus edge to be identifiable as Northeastern University (campus image). Provide more open and welcoming edge to adjacent residential community. 	<ul style="list-style-type: none"> Plant street trees along entire edge. Provide signage for campus identity. Establish open lawn on M.B.T.A. right-of-way. Screen Ruggles Building parking lot from street with deciduous trees and shrub planting.
A-5	Southwest Corridor/ Ruggles Station edge	<ul style="list-style-type: none"> Reduce visual impact of large scale walls and structure. 	<ul style="list-style-type: none"> Partially screen blank walls of station facing campus with new buildings and tree planting. Locate service driveways and secondary pedestrian pathways adjacent to corridor.
A-6	Columbus Avenue	<ul style="list-style-type: none"> Define and unify campus edge to be identifiable as Northeastern University (campus image). Provide landscape compatible with adjacent residential neighborhood. 	<ul style="list-style-type: none"> Plant street trees along entire edge. Establish public plaza and shrub plantings associated with recreation center to make it an attractive feature within neighborhood. Provide signage for campus identity.
A-8	The Fenway	<ul style="list-style-type: none"> Continue to have a low profile and blend into the established residential character of the area. 	<ul style="list-style-type: none"> Maintain the existing park landscape associated with the large residential buildings facing The Fenway.
A-9	Hemenway Street	<ul style="list-style-type: none"> Continue to blend into the context of this urban, residential street. 	<ul style="list-style-type: none"> Maintain street tree planting.
GATEWAY			
B-1	Quadrangle Entrance	<ul style="list-style-type: none"> Major campus entry. Enhance campus edge by establishing imageable entrance. Direct pedestrian circulation 	<ul style="list-style-type: none"> Should be highlighted with more visible architectural expression or threshold. Should incorporate decorative lighting to establish greater nighttime presence. Entry signage. Paved areas for pedestrian circulation and gathering.
B-2	Forsyth Street	<ul style="list-style-type: none"> Major campus entry. Enhance campus edge by establishing an imageable entrance. Direct pedestrian circulation. Direct vehicular traffic (visitor, emergency, some delivery and maintenance). 	<ul style="list-style-type: none"> Should be highlighted with more visible architectural expression incorporating plant materials, signage, and lighting in overall design. Separation of pedestrian and vehicular traffic.
B-3	LeBeau Park Entrance	<ul style="list-style-type: none"> Major campus entry. Enhance campus edge by establishing imageable entrance. Direct pedestrian traffic. Highlight campus link to Back Bay Fens. 	<ul style="list-style-type: none"> Should be emphasized with more visible architectural expression incorporating plant materials, signage and light fixtures. Paved areas for pedestrian circulation and gathering. Gateway should be located on Forsyth Way axis to frame views to Back Bay Fens.
B-4	Western Entrance to Mall	<ul style="list-style-type: none"> Major campus entry. Enhance campus edge Establish final terminus to Mall. Provide open space between link to Campus and Wentworth Institute. Direct pedestrian traffic. 	<ul style="list-style-type: none"> Should be highlighted with tree planting used in design of mall. Decorative night lighting. Should include sculptural element or fountain to provide visible terminus to Mall.
B-5	Ruggles Station	<ul style="list-style-type: none"> Major campus entry. 	<ul style="list-style-type: none"> Station structure incorporates entrance treatment. Forsyth Street connection to Ruggles Station should be maintained.
B-6	St. Botolph Street	<ul style="list-style-type: none"> Major campus entry. Enhance and define campus edge. Direct and separate pedestrian and vehicular traffic. 	<ul style="list-style-type: none"> Highlight with architectural expression incorporating lighting and signage. Distinct pedestrian and vehicular pavement.
B-7	Ruggles Street	<ul style="list-style-type: none"> Campus entry corridor. Enhance and define campus edge. 	<ul style="list-style-type: none"> Provide signage for campus identity. Provide decorative night lighting.
B-8	Fenway/Forsyth Dental	<ul style="list-style-type: none"> Major campus entry. Enhance and define campus edge. Direct pedestrian flow. 	<ul style="list-style-type: none"> Highlight with architectural expression incorporating lighting and signage. Provide decorative night lighting. Provide understory plant materials.

TABLE 2. (CONTINUED)

Open Space ¹	Location	Function/Design Intent	Recommended Action
GATEWAY (Continued)			
B-9	Matthews Arena	<ul style="list-style-type: none"> • Campus entry corridor. • Enhance and define campus edge. • Direct pedestrian flow. 	<ul style="list-style-type: none"> • Highlight with architectural expression incorporating lighting and signage. • Provide decorative night lighting.
B-10	Columbus Avenue	<ul style="list-style-type: none"> • Campus entry corridor. • Enhance and define campus edge. • Direct pedestrian and vehicular flow. 	<ul style="list-style-type: none"> • Highlight with architectural expression incorporating lighting, signage and plant materials. • Provide decorative night lighting.
MALL			
C-1	Between proposed Resource Center Building and Leon Street right-of-way	<ul style="list-style-type: none"> • Organize plan of campus expansion. • Direct pedestrian circulation. • Provide landscaped open space for informal recreation and relaxation. • Highlight building entrances. • Provide location for sculpture, bell tower or other University landmark. • Emergency vehicle access. 	<ul style="list-style-type: none"> • Minimum cross section width of 100' for Mall. Building should maintain same setback. • Plant double row of upright or columnar trees at both edges of Mall. • Locate 10' walkways at both edges of Mall or center line of each double row of trees. • Plant lawn in central portion of Mall. • Major architectural feature (sculpture, fountain) should be located at start of Mall in front of Resource Center to symbolize campus center.
C-2	Between Parker Street and the abandoned Leon Street right-of-way	<ul style="list-style-type: none"> • Organize plan for campus expansion. • Direct pedestrian circulation. • Provide open space for informal recreation and relaxation. • Highlight building entrances. • Provide location for sculpture fountains or other University landmark. • Maintenance and emergency vehicle access. 	<ul style="list-style-type: none"> • Minimum cross section width of 80' for Mall. • Maintain uniform building setback along outer edges of Mall. • Create formal landscape character (plant double row of upright trees at outer edges). • Locate walkways associated with double rows of trees at both edges of Mall. • Establish large central lawn between double rows of trees. • Locate sculptural features or other minor landmark at Parker Street terminus and at intersection between the two Mall segments. • Create planting/entrance zone between sidewalk and building facades.
CONNECTORS			
D-1	Forsyth Street	<ul style="list-style-type: none"> • Major pedestrian circulation and access from both Huntington Avenue and Ruggles MBTA Station. • Main visitor entrance (vehicular). • Delivery, maintenance and emergency vehicular route. • Highly visible area from adjacent community. 	<ul style="list-style-type: none"> • Maintain separate vehicular and pedestrian areas. • Narrow street to 30 feet to create adequate pedestrian zones. • Directional signage. • Plant street trees to create formal character that emphasizes vista to Ruggles Station. • Install lighting appropriate for combined pedestrian and vehicular use along both sides of roadway (minimum height = 25').
D-2	Connector between Huntington Avenue and main entrance to proposed Resource Center (Cabot, Richards, Hayden and Churchill also front onto connector)	<ul style="list-style-type: none"> • Major pedestrian circulation link. • Pleasant pedestrian environment. • Limited service, maintenance and emergency vehicle access and handicapped parking. • Vista to new Library (campus image) from Huntington Avenue (campus image). • Formal landscape character. 	<ul style="list-style-type: none"> • Pavement surfaces must have pedestrian walkway character so that motorists are aware they are in pedestrian zone. • Remove existing curb. • Plant row of trees along both sides of walkway to frame vista to Library. • Establish lawn and foundation planting between walkway and buildings.
D-3	Connector between Ell Building and Hayden Hall	<ul style="list-style-type: none"> • Maintain space as pedestrian circulation. 	<ul style="list-style-type: none"> • Maintain existing landscape character. • Install decorative lighting along one edge of space appropriate for a pedestrian zone.
D-4	St. Botolph Street	<ul style="list-style-type: none"> • Major pedestrian link into campus interior. • Major service vehicle access into campus interior. • Enhance positive urban character and pedestrian street. 	<ul style="list-style-type: none"> • Maintain curbing at edge but introduce special paving (brick or concrete pavers) to show all users potential conflict between pedestrians and motorists. Special paving will also enhance tight urban character of connector. • On-street parking for cars should be minimized through cooperative efforts with adjacent institutions. • Install lighting appropriate for combined pedestrian and vehicular use (minimum height = 25').
D-5	Connector linking Forsyth Street and Hayden Hall	<ul style="list-style-type: none"> • Pedestrian circulation. • Limited service, maintenance and emergency vehicular circulation. • Positive urban character and pedestrian street. 	<ul style="list-style-type: none"> • Maintain curbing at edge but introduce special paving (brick or concrete pavers) to show to all users potential conflict between pedestrians and motorists. Special paving will also enhance tight urban character of connector. • Minimize police car parking within the central portion of campus. • Install lighting appropriate for combined pedestrian and vehicle circulation (minimum height = 25').

TABLE 2. (CONTINUED)

Open Space Location	Function/Design Intent	Recommended Action
CONNECTORS (Continued)		
D-6 Connectors created by the former right-of-ways of Greenleaf and Leon Streets	<ul style="list-style-type: none"> • Pedestrian circulation and environment. • Limited maintenance and emergency vehicular circulation. • Informal landscape character. • Enhance buildings and entrances. 	<ul style="list-style-type: none"> • Replace street pavements and curbs with 12' walkways that will emphasize pedestrian use. • Plant trees in softer, more naturalistic massing in open lawn areas. • Building edges and entrances parallel to walkway should be reinforced with formal tree plantings. • Install lighting appropriate for pedestrians and service vehicles.
COURTYARD		
E-1 The "Quadrangle" (formed by the edges of Huntington Avenue, Dodge and Richard)	<ul style="list-style-type: none"> • Highly imageable open space with much public visibility. • Enhances adjacent buildings and respective entrances. • Pedestrian circulation, relaxation and passive recreation. • Camous entrance for pedestrians. • Link to Huntington Avenue, MBTA Greenline and western sector of camous. 	<ul style="list-style-type: none"> • Maintain existing landscape character. • Increase number of benches along sidewalks, where appropriate.
E-2 Courtyard formed by facades of Peabody, Hurtig, Robinson and the Ell Student Center	<ul style="list-style-type: none"> • Imageable interior camous open space. • Enhance building facades and entrances. • Pedestrian circulation, informal gathering and relaxation. • Delivery, maintenance and emergency vehicle circulation. • Formal, urban design character. 	<ul style="list-style-type: none"> • Special paving (brick or concrete pavers) to identify courtyard as pedestrian zone to drivers who must cross through space. • Restrict traffic to only delivery, maintenance, emergency and ceremonial vehicles. • Eliminate parking, except for the handicapped. • Install central focal feature (sculpture or fountain). • Benches and seatwalls. • Formal tree and shrub planting to emphasize edges of courtyard. • Open lawn panels.
E-3 Ell Student Center outdoor courtyard	<ul style="list-style-type: none"> • Informal student gathering place. • Outdoor eating associated with food service of Student Center. • High profile outdoor space as part of Ell Student Center and connected to the proposed Resource Center. 	<ul style="list-style-type: none"> • A series of broad terraces should step down from Library entrance plaza to lower elevation of student center cafeteria to create gentle grade transition. • Extend courtyard around to the southside of the Ell Building. • Special paving (brick, flagstone or granite pavers) to identify area as unique. • Low decorative fence or hedge to define and separate area from adjacent outdoor circulation spaces. • Chairs and tables for outdoor dining. • Plant trees to create continuous canopy over chairs and tables. • Decorative lighting (maximum height = 16').
E-4 Library entrance plaza	<ul style="list-style-type: none"> • Enhance Library entrance. • Pedestrian circulation and gathering. • Limited service, maintenance and emergency vehicular circulation. • Link with the Mall and Ell Student Center outdoor space. 	<ul style="list-style-type: none"> • Special paving (brick or concrete pavers) to identify area as primarily for pedestrian use to those motorists that must drive through space. • Open paved area adjacent to Resource Center. • Formal tree plantings in front of other buildings to minimize their impact on Resource Center plaza. • Extend plaza design from Snell to Hayden.
E-5 Courtyard created by edge of Huntington Avenue and facades of Richards and Cabot.	<ul style="list-style-type: none"> • Highly imageable and visible open space from Huntington Avenue. • Pedestrian circulation and informal gathering area. • Limited service, maintenance and emergency vehicular circulation. • Formal landscape character. 	<ul style="list-style-type: none"> • Pavement treatment to identify area as a pedestrian zone to motorists who must drive through the space. • Minimize parking spaces for cars. • Linear tree planting at architectural edges. • Screen loading entrances with evergreen shrub plantings. • Maintain open lawn area for informal play and relaxation. • Locate benches perimeter walkway outer edge. • Locate light fixtures at outer edge of walkways (maximum height = 16'). Pedestrian entrances to buildings should be emphasized with night lighting.
E-6 Courtyard at entrance to proposed student residences on western side of Huntington Avenue	<ul style="list-style-type: none"> • Pedestrian circulation and gathering area, informal play. • Vehicular drop-off and loading. • Imageable entrance to proposed residences. • Informal landscape character. 	<ul style="list-style-type: none"> • Special paving (brick or concrete) to identify courtyard as primarily a pedestrian zone. • Softer, more naturalistic tree planting with open lawn, emphasizing building entrance. • Pedestrian lighting on outer edges of the walkways (maximum height = 16'). • Emphasize building entrances with lighting.

TABLE 2. (CONTINUED)

Open Space ¹	Location	Function/Design Intent	Recommended Action
COURTYARDS (Continued)			
E-7	Courtyard formed by building facades of Forsyth, Churchill, Haven and Cadot	<ul style="list-style-type: none"> • Pedestrian circulation and informal gathering area. • Service, maintenance and emergency vehicular circulation. • Aesthetically enhance interior portions or campus open space. • Formal landscape character. 	<ul style="list-style-type: none"> • Special paving to identify area as primarily pedestrian zone to motorists who must drive through the space. • Minimize parking spaces for cars. • Establish lawn panels with pathways along pedestrian desire lines. • Screen service entrances with evergreen shrubs. • Benches on seatwalls separating planting beds from walkways at building edges. • Adjacent outdoor lighting from surrounding connectors spaces should provide sufficient night lighting. • Emphasize pedestrian entrances to buildings with lighting.
E-8	Ruggles Street Plaza at terminus of Forsyth Street	<ul style="list-style-type: none"> • MBTA owned and controlled. • Automobile, service, maintenance and emergency vehicular traffic. • Pedestrian circulation (University, community). • Highly visible area within context of community as well as University campus. 	<ul style="list-style-type: none"> • While in public domain, area should be maintained by University standards established for surrounding campus. Because area appears as part of University, poor maintenance will reflect adversely on campus image.
E-9	Courtyards associated with proposed residential expansion on western campus edge adjacent to Parker Street.	<ul style="list-style-type: none"> • Pedestrian circulation. • Informal recreation and relaxation. • Limited maintenance and emergency vehicular traffic. • Informal landscape character to create residential district. 	<ul style="list-style-type: none"> • Walkways linking residential entrances with campus entrances. • Soft, naturalistic massing of new tree plantings in lawn. • Open lawn for informal play and relaxing. • Lighting should be building-mounted decorative fixtures located in association with building entrances.

¹NOTE: Open space codes are keyed to Figure 9, Open Space Design Guidelines Concept Plan.

BUILDINGS

The predominant architectural style on the Northeastern University campus continues to be the "classical, modern" design of white glazed brick established in 1934. However, the incremental growth of campus facilities has introduced, through purchases of existing structures and new construction, varied building styles, sizes and materials. The relatively consistent grid pattern associated with the location of buildings in the academic core is considerably less well defined in the southern and western portions of campus. These areas which are adjacent to the academic core represent the areas for growth in physical facilities for the University. Thus, the two major building design issues from the Master Plan perspective are the following:

- . Resolution of the varied architectural building styles represented on campus into compatible groupings.
- . Siting of new buildings within a coherent and well defined open space framework.

To properly focus the building design guidelines, the following categories have been established which address key building architectural features and siting parameters.

Relationship of Buildings to Site

A well defined, coherent open space framework has been set forth by the Master Plan. As a priority ordering device, the open space system provides the dominant site features to which building siting should respond. New buildings should be sited in a manner that respects the integrity of the functions and dimensions of the open space system. This can be achieved with appropriate building setbacks from the Mall, appropriate setbacks from walkways and roads, location of major pedestrian entries to buildings directly off major open space corridors, consistent axial relationships between buildings and open space corridors, and location of service entries that eliminate the need for service vehicles to impinge on major open space corridors.

Unity Between Old and New

Central to the idea of achieving a unified design for the campus is the need to develop clear ties between new and existing buildings. These ties should be visual and functional. Visual ties involve building

form defined in six fundamental aspects: size, shape, color, texture, directionality and location. Buildings which possess similar aspects of form will be perceived as a unified group. The more aspects that bear similarity, the greater the sense of unity there will be. The basic goal of new architecture on the campus should be to enhance the visual unity of the campus. No one aspect of form is responsible for visual unity, rather, a combination of factors unique to each situation will result in a compatible composition. For example, Richards Hall, Dodge Library and the Ell Building form a grouping of buildings with a unified image based on consistency of all essential design features. While the recently constructed Snell Building has a compatible shape, size, color and texture with the adjacent Dana Hall and Hayden Hall, it lacks a positive response to the existing building context in terms of directionality (vertical facade alignment and proportion).

The aspects of building form are interactive, and some play a more important role than others on the University campus. Accordingly, with new buildings proposed by the Master Plan, primary attention should be given to building location, size and facade directionality in relation to the existing buildings on campus.

Building Shape, Color and Texture

Secondary aspects of building design, such as building shape, color and texture, should also be made compatible with the traditional standards of University buildings. General building shape should be rectangular or square.

An overall vocabulary has been established which includes white glazed brick for exterior materials. While there are examples of inconsistency in materials of buildings constructed by the University (Cargill, Snell, Kariotis), by enlarge the introduction of red brick has occurred in sectors of the campus (west of Forsyth Street) dominated by existing buildings purchased by the University. Thus, a logical sectoring of new buildings on campus should be achieved which is directly related to the proximity of University-constructed white brick buildings and University acquired red brick buildings.

Facade Proportion

Directional aspects of campus buildings include building alignment and facade proportion and expression. New buildings should align with the pedestrian grid. New buildings should be essentially

vertical in proportion, and the facade expression vertical as well. This feature will assist in successssfully blending the new buildings with the original campus buildings.

Building Size

Building size should be controlled to maintain a common scale relationship between existing and proposed campus buildings. Building height should typically be four to six stories, or 45 to 70 feet. Only special architectural elements in key landmark locations should exceed this limit. Of the new buildings, the Performing Arts Center (theatre) presents the most appropriate and best opportunity to successfully integrate vertical focal elements in building design. Increased building height above the average may also be appropriate for sections of the new student housing sector proposed adjacent to the West Apartments, currently the tallest building on campus.

APPENDIX

Northeastern University

CAMPUS MASTER PLAN

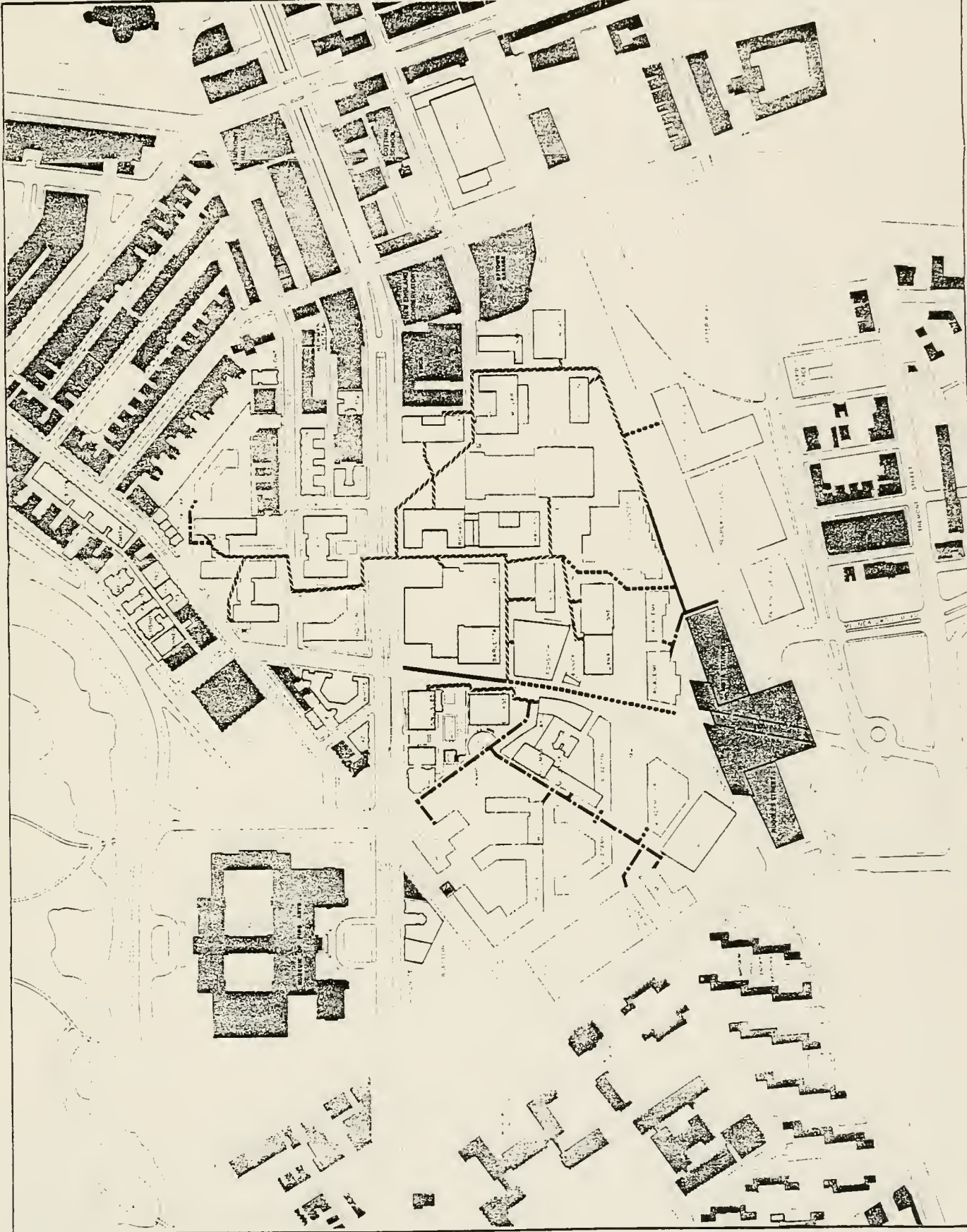
HIGH & LOW VOLTAGE ELECTRICAL SYSTEM

- EXISTING 13.8
KV EDISON FEEDER
- EXISTING HIGH
& LOW VOLTAGE DUCTBANK
& PROPOSED PARALLEL
LOW VOLTAGE DUCTBANK
- PROPOSED HIGH
& LOW VOLTAGE DUCTBANK
- PROPOSED
13.8 KV EDISON FEEDER
(ASSUMED LOCATION)

Figure A1.



Revised: 10/10/10, 10/10/10, 10/10/10
 Prepared by: Northeastern University
 Civil & Environmental Engineering Dept.
 100 Morrissey Blvd., Boston, MA 02125
 Date: 10/10/10
 Scale: 1" = 100' (AS SHOWN ON THE MAP THE LINE
 MAY BE SHOWN BY THE SYSTEM
 10/10/10



Northeastern University

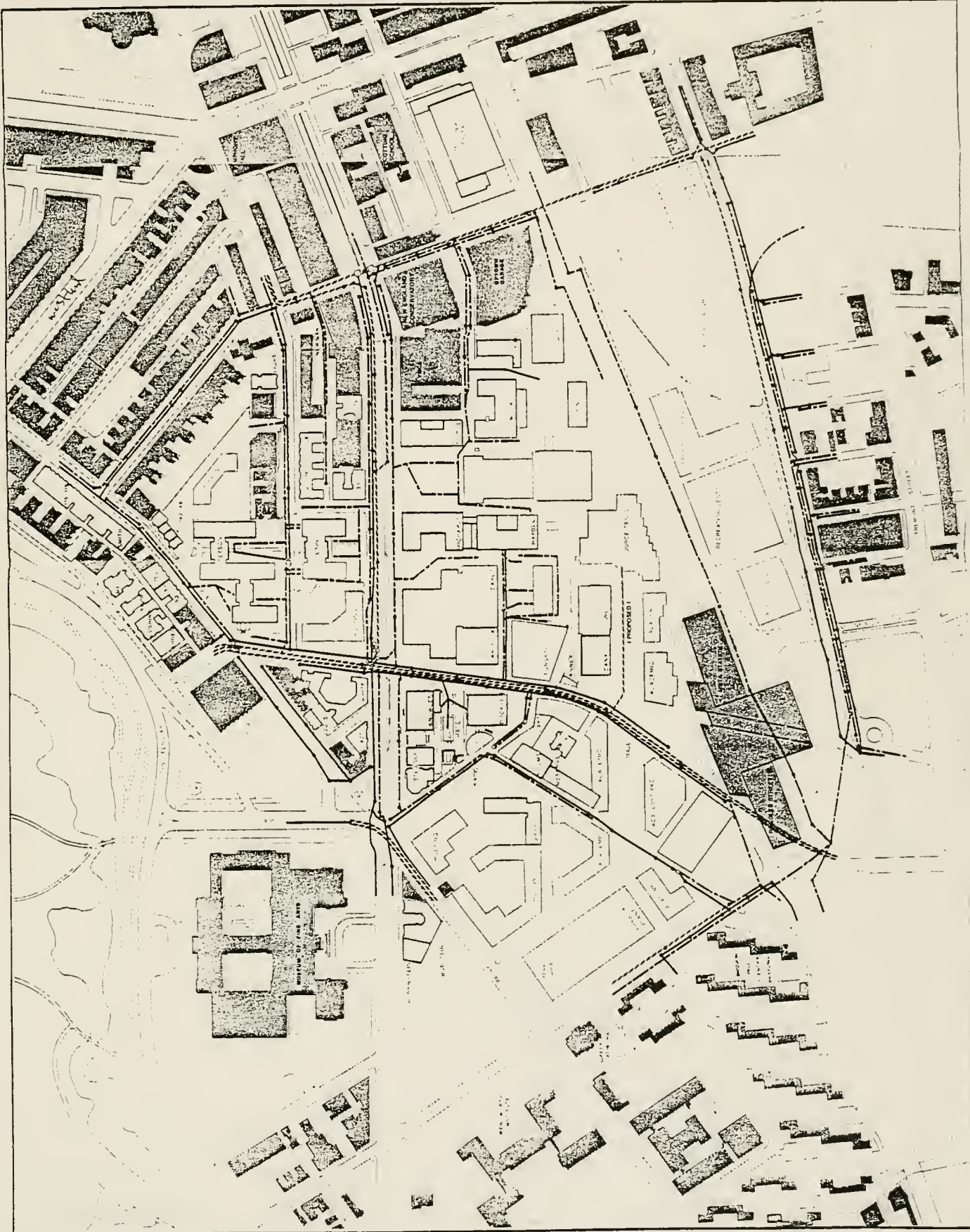
CAMPUS MASTER PLAN

SEWER & DRAINAGE

SEWER	—
DRAINAGE	---
SEWER / DRAIN	----
MANHOLE	•
OVERFLOW REGULATOR	o
SPECIAL MANHOLE	□

Figure A2

North Eastern, Inc.
Planning Architectural Engineering Surveying
Civil Engineering Environmental Science
Worcester, Massachusetts 01601
Date September 1981
Scale 1" = 100' 1/2" = 100' 1/2" = 100' 1/2"
NOT TO BE USED FOR ANY OTHER PURPOSE
WITHOUT THE WRITTEN CONSENT OF THE ENGINEER




Northeastern • University •

CAMPUS MASTER PLAN

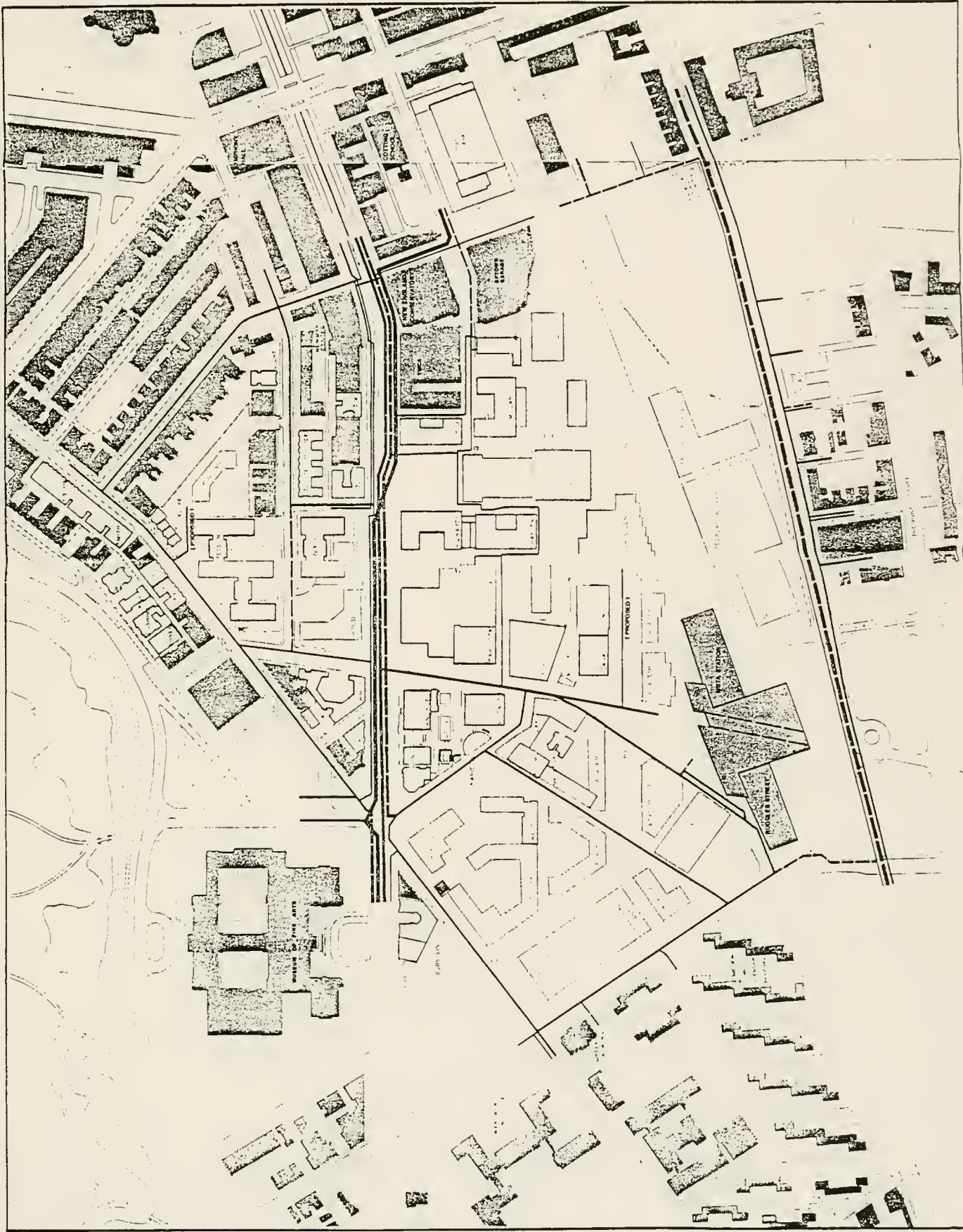
WATER LINES

- 42" W
- 30" W
- 20" W
- 16" W
- 12" W
- 10" W
- 8" W
- 6" W

Figure A3.



 Robert Langford, Inc.
 Planning, Architectural, Landscape, Structural
 Civil Engineering, Environmental Sciences
 1000 Massachusetts Avenue, Suite 1000
 Cambridge, Massachusetts 02139
 617-452-1111
 617-452-1112
 617-452-1113
 617-452-1114
 617-452-1115
 617-452-1116
 617-452-1117
 617-452-1118
 617-452-1119
 617-452-1120
 617-452-1121
 617-452-1122
 617-452-1123
 617-452-1124
 617-452-1125
 617-452-1126
 617-452-1127
 617-452-1128
 617-452-1129
 617-452-1130
 617-452-1131
 617-452-1132
 617-452-1133
 617-452-1134
 617-452-1135
 617-452-1136
 617-452-1137
 617-452-1138
 617-452-1139
 617-452-1140
 617-452-1141
 617-452-1142
 617-452-1143
 617-452-1144
 617-452-1145
 617-452-1146
 617-452-1147
 617-452-1148
 617-452-1149
 617-452-1150
 617-452-1151
 617-452-1152
 617-452-1153
 617-452-1154
 617-452-1155
 617-452-1156
 617-452-1157
 617-452-1158
 617-452-1159
 617-452-1160
 617-452-1161
 617-452-1162
 617-452-1163
 617-452-1164
 617-452-1165
 617-452-1166
 617-452-1167
 617-452-1168
 617-452-1169
 617-452-1170
 617-452-1171
 617-452-1172
 617-452-1173
 617-452-1174
 617-452-1175
 617-452-1176
 617-452-1177
 617-452-1178
 617-452-1179
 617-452-1180
 617-452-1181
 617-452-1182
 617-452-1183
 617-452-1184
 617-452-1185
 617-452-1186
 617-452-1187
 617-452-1188
 617-452-1189
 617-452-1190
 617-452-1191
 617-452-1192
 617-452-1193
 617-452-1194
 617-452-1195
 617-452-1196
 617-452-1197
 617-452-1198
 617-452-1199
 617-452-1200



Northeastern University

CAMPUS MASTER PLAN

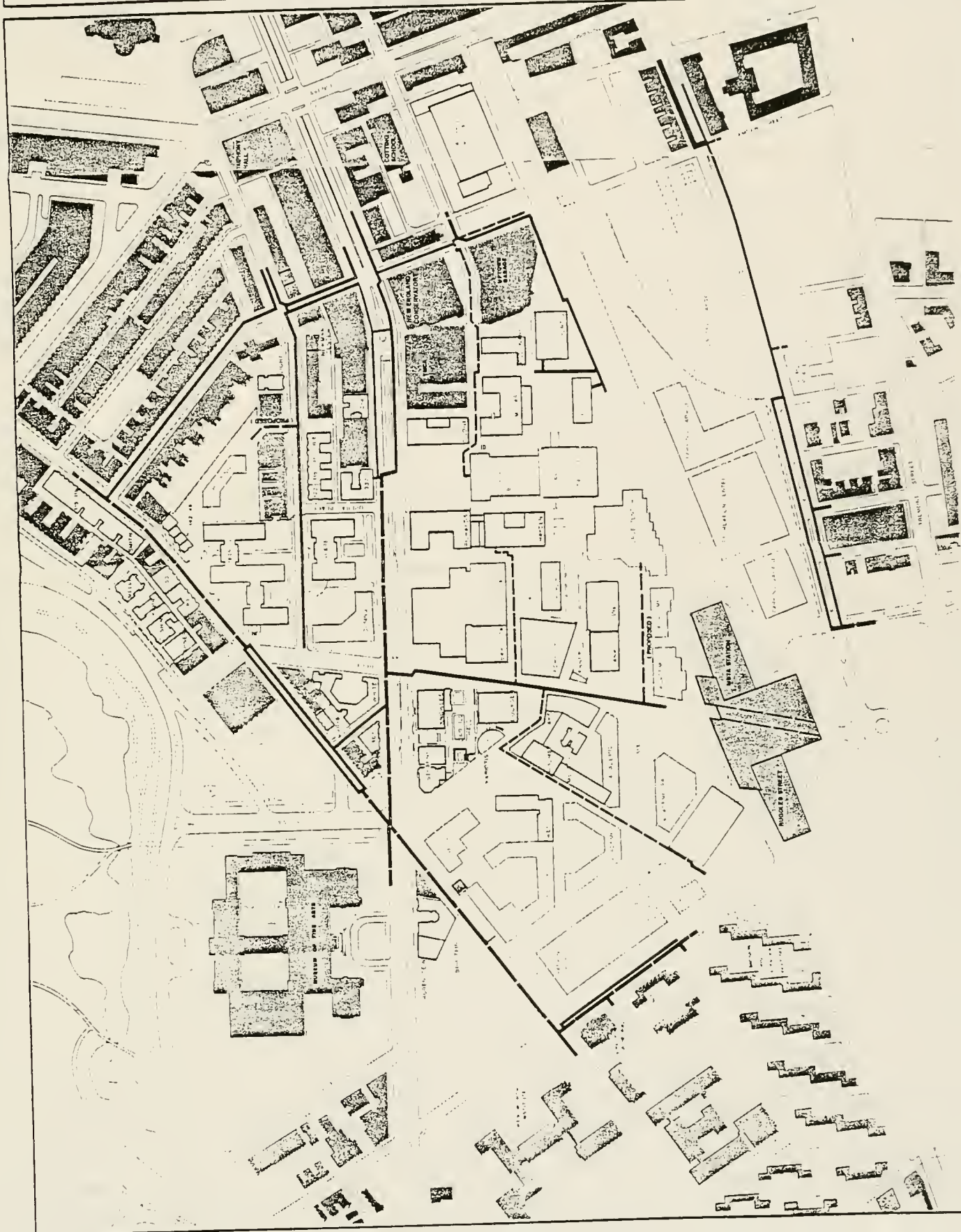
GAS LINES

- 12" GAS LINE
- 8" GAS LINE
- 6" GAS LINE
- 4" GAS LINE
- 3" GAS LINE
- 2" GAS LINE

Figure A4



Reilly Associates, Inc.
 Planning, Architectural, Landscape & Interior
 Civil Engineering, Environmental Sciences
 Mechanical, Microcomputer, S&P, GIS
 One November Street
 Boston, MA 02118
 617-552-1100
 FAX 617-552-1101
 NOT FOR CONSTRUCTION OR FOR ANY OTHER USE
 WITHOUT WRITTEN PERMISSION



Northeastern
• University •

CAMPUS MASTER PLAN

STEAM NETWORK

UNIVERSITY
STEAM NETWORK

STEAM / CONDENSATE RETURN

14° / 4°
12° / 2°
10° / 2°
10° / 2°
8° / 2°
6° / 2°

EDISON STEAM LINE

10' ST —
8' ST —
6' ST —
4' ST —

Figure A5



Beverly Associates, Inc.

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED
DATE 06-07-2008 BY 60322 UCBAW/BJS

DECLASSIFICATION AUTHORITY DERIVED FROM:
FBI AUTOMATIC DECLASSIFICATION GUIDE
DATE 06-07-2008 BY 60322 UCBAW/BJS

BOSTON PUBLIC LIBRARY



3 9999 06316 382 6

